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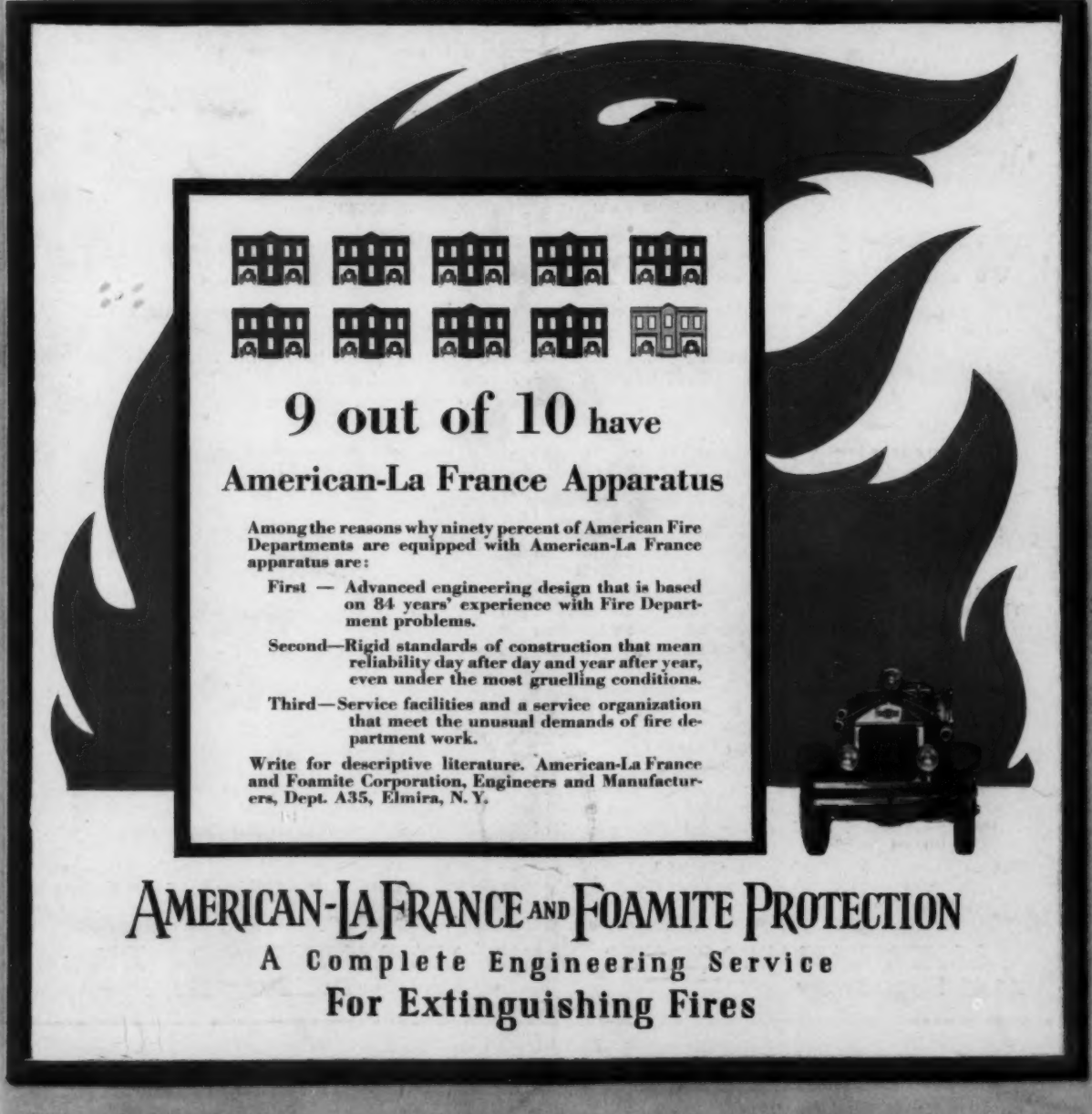
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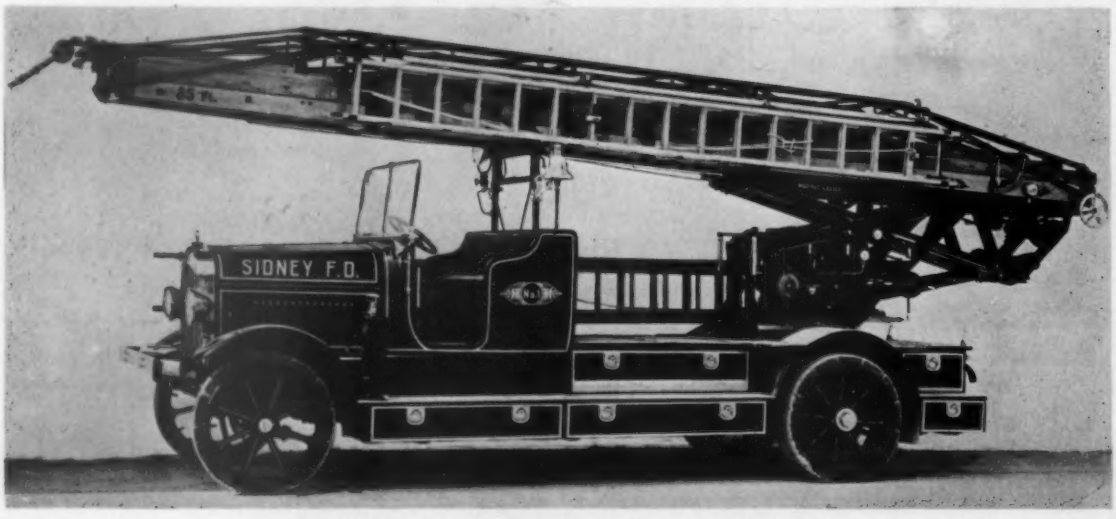

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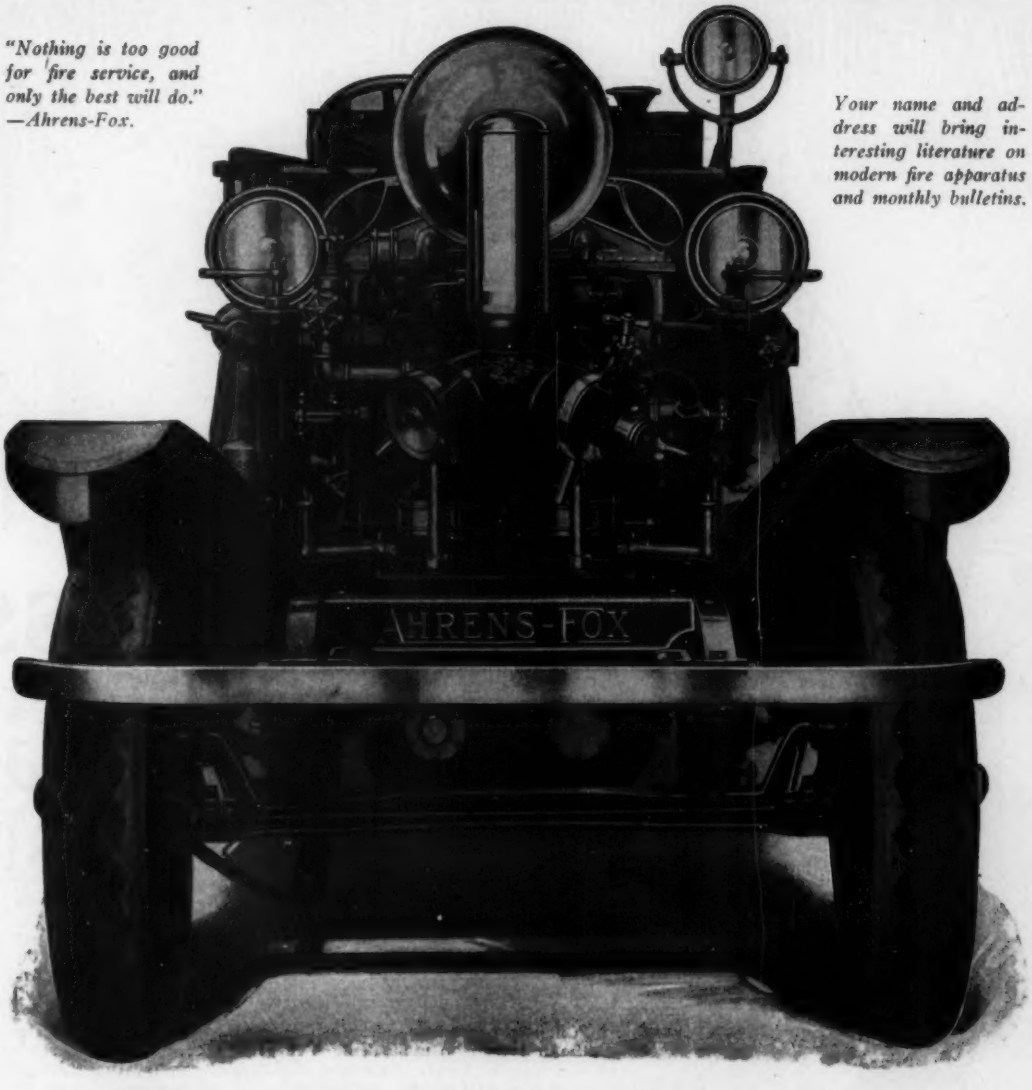

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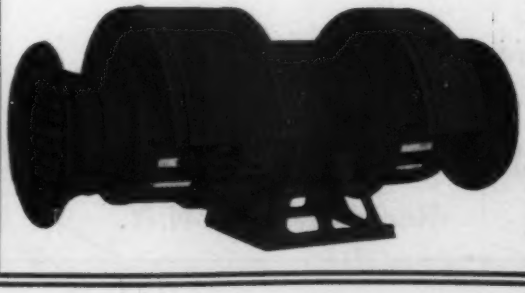

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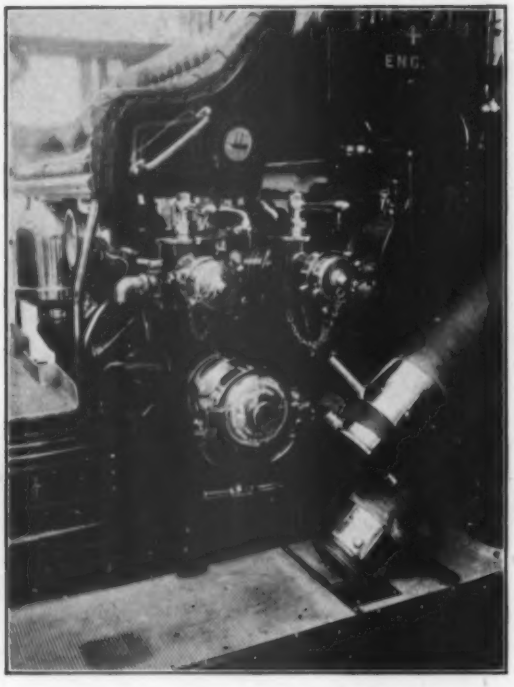

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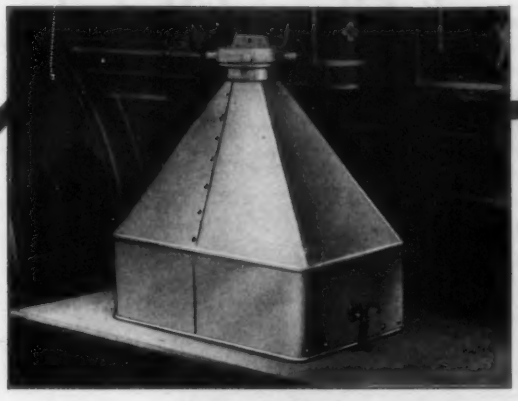

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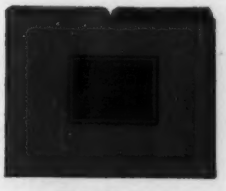

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The Journal of the Fire Protection Profession

VOLUME LXXXII JUNE 12, 1929 NUMBER 12

New Haven—Its Fire Department

History, Organization and Equipment—Good Progress Under Chief Lawrence E. Reif

By HARRY BELKNAP

NEW HAVEN, the 1929 Convention City of the New England Association of Fire Chiefs, is protected by an efficient fire fighting force under the direction of Chief Lawrence E. Reif, who was appointed to head the organization on Dec. 31, 1925, as successor to Chief Rufus R. Fancher.

The Department of Fire Service, as the fire fighting force is officially known, operates on the two platoon system and the equipment consists of sixteen engine companies and six hook and ladder companies. Most of the apparatus, all of which is motorized, is of the well known Seagrave make, manufactured by the Seagrave Company, of Columbus, O. Engine Company No. 12 on Crown Street has a new Mack motor pumper. The Gamewell alarm system is located on the top floor of a 3 story fireproof building. On the second floor are the chief's office and fire prevention bureau with the cars of the chief and 1st assistant chief on the main floor.

Chief Lawrence E. Reif, New Haven, Conn.

The water supply is obtained from the New Haven Water Company which was incorporated in 1849. Construction of the water works was begun in 1860 and water was first distributed in 1862.

The filter plant is located about 800 feet west of and directly connected by a 36 inch main with Lake Whitney. There are four pumping stations, two at Lake Whitney, one at Lake Saltonstall, and one on Beacon Hill.

There are the following cast iron supply mains entering the city distribution system: from Lake Dawson, about 3½ miles northwest, a low service 36 inch main; from the East Haven reservoir and Lake Saltonstall, about one and three miles southeast respectively, a throttled low service 24 inch reduced to 16 inch; from Lake Wintergreen, about 3 miles northwest, a high service 16 and 12 inch, interconnected by 8 and 10 inch mains with Mill Rock standpipe and the Whitneyville high service pumps; and from Prospect Hill reservoir, about 1¼ miles north, two low service 24 inch mains reduced to 20 and 16 inch respectively.

Hydrants are owned by the city and are in charge of the fire department. On Jan. 1, 1928, there were 1454 public hydrants in service, all of the post type.

The fire alarm system is a manual system of Gamewell make and was installed in June, 1913. The apparatus includes a 40 circuit protector board; two 20 circuit battery charging boards; two 15 circuit relay working boards for box circuits; one 10 circuit tapper and gong board, all of slate; a single dial, 4 figure, 2 speed, manual transmitter for tapper and gong circuits; six 5 circuit puncturing registers with take-up reels for incoming alarms; 2 punch registers with take-up reel for outgoing alarms, one with time stamp; one punch register with take-up reel for incoming A. D. T. alarms, and one punch register with take-up reel for receiving test alarms. Current is supplied by 706 cells of 6-ampere-hour storage batteries in duplicate sets mounted on glass rails on porcelain knobs on metal racks. There are in use 23 box circuits, 5 tapper, 5 gong, 2 local, and one special signal circuits. The total number of alarm boxes in 1928 was 342 and some have been added since.

Newest Firehouse and Apparatus

The newest firehouse in New Haven is a handsome brick structure of Dutch Colonial design erected at the corner of East Grand Avenue and Lenox Street in the Fair Haven section of the city and occupied by Engine Company No. 17. The building is two and a half stories high and was designed by Brown and Von Buren, architects. The apparatus of this company consists of a 600 gallon Seagrave motor pumper with booster tank and a Seagrave combination motor chemical and hose wagon. The house was placed in service last year.

In the rear of the Whalley Avenue firehouse there is a modern concrete drill tower which is used for company evolutions and in the training of men in the drill school.

Assistant Chief Patrick F. Redmond, New Haven, in Charge of the Fire Prevention Bureau

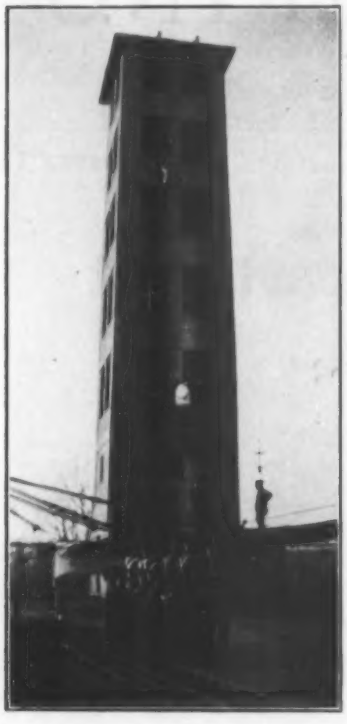
A repair shop is located in a one story addition at the rear of Engine Company No. 4 house. The equipment includes among other things an arbor press, anvil, crane, electrically driven lathe, bench tools, welding apparatus, etc.

Apparatus of the Department

The motor pumping engines are of the following sizes, according to the 1928 report of the National Board of Fire Underwriters: one 1000 gallon pumper, three 800 gallon pumpers, ten 750 gallon pumpers, two 600 gallon pumpers, and one 800 gallon with one in reserve and four aerial ladder

trucks, two city service ladder trucks, and one aerial truck in reserved.

The total fire loss for 5 years prior to 1928, exclusive of 1926, was $3,420,400, varying from $500,926 in 1923 to $955,981 in 1924. The annual number of actual fires averaged 833, varying from 703 in 1927 to 900 in 1923, with an average loss per fire of $822, a moderate figure.



The Drill Tower, New Haven

The Beginnings of the Fire Department

In the days of the old volunteer fire department in New Haven there were the following companies: Croton Engine Company No. 1, Fountain Engine Company No. 2, Relief Engine Company No. 3, Franklin Engine Company No. 4, Phoenix Engine Company No. 5, Neptune Engine Company No. 6, Washington Engine Company No. 7, Hercules Engine Company No. 8, Empire Engine Company No. 9, Guardian Engine Company No. 10, Mutual Hook and Ladder Company No. 1, Hook and Ladder Company No. 2, Quinnipiac Hook and Ladder Company No. 3, Columbia Hose Company No. 1, and the Deliverance Sack and Bucket Company No. 1.

The volunteer force was organized at a meeting of the citizens on December 29, 1789. Mayor Roger Sherman presided and Companies No. 1 and No. 2 were established and furnished with hand engines built by E. Chittenden, of New Haven. The companies were limited to 17 members each and the officers were chosen by the Common Council.

In the Old Horse-Drawn Days in New Haven
Hose Wagon of Engine Co. No. 12, with Team and Driver

Mayor Samuel Bishop issued an order on April 11, 1797, that "all householders must furnish a bucket and when an alarm of fire is given must turn out and use the bucket to assist the firemen or throw it from the window or place it on the walk so that someone can use it to help put out the fire."

A new engine was purchased on November 7, 1801, and this was called No. 3. In 1805 another new engine, No. 4, was bought, also a cart to carry ladders to a fire and a sack and bucket cart.

On May 6, 1805, the city was divided into six wards and each ward had a fire warden. The Governor's Guards were accepted as firemen and the entire department numbered 150 men. In 1800 each engine company was furnished with 60 feet of new hose and the first hook and ladder company was organized with William Mix as foreman.

Horseback Patrol for Fires

In January, 1821, a law was passed to have the church bells rung for a fire and to have men patrol the city on horseback to find where the fire was and then cry it out. In the same year the fire wardens were instructed to appoint a chief engineer and one assistant to have charge of the fire department. Samuel Ward and Luther Bradley were duly chosen.

R. M. Clark was chosen as chief engineer on June 10, 1834. In this same year Company No. 8 was formed in Fair Haven with Miles Tuttle as foreman. In 1837 Hook and Ladder Company No. 3 was formed in Fair Haven.

Eli Austin was elected chief engineer on September 7, 1841. In 1842 Mayor Philip S. Galpin was named as chief engineer. The next men to serve as chief engineers were Leverett Griswold in 1843, Levi Gilbert in 1844, Alfred Dagget in 1845, and Leverett Shepard in 1846. The following year a Board of Engineers was organized to consist of the chief and six assistants. Charles Thompson was chosen chief of this board and was succeeded in 1848 by James T. Hemingway.

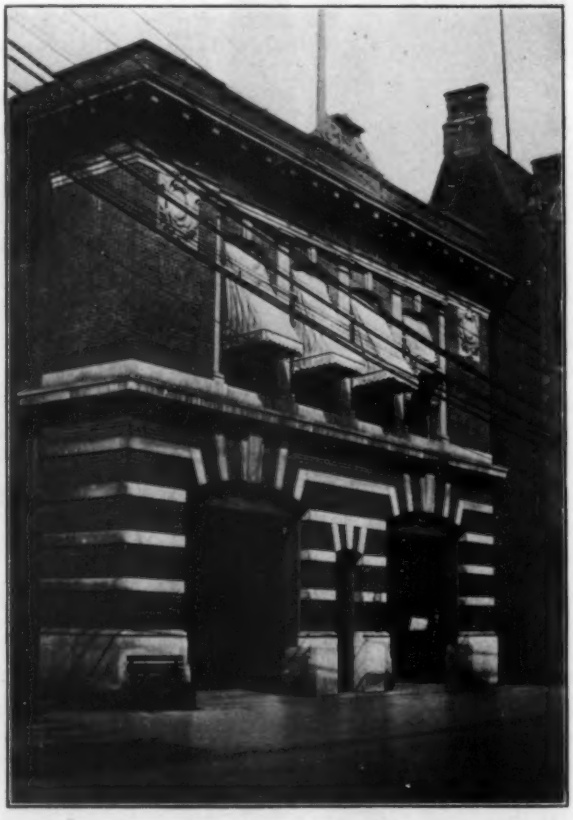
Charles A. Nettleton was elected chief engineer on August 2, 1852.

Guardian Engine Company No. 10 was organized in 1853. C. W. Allen was chosen chief engineer in this same year. He was succeeded in 1856 by Hiram Camp who was the last chief of the old volunteer department. The first steps toward procuring a steam fire engine and establishing a paid department were taken in the year 1860.

First Steam Engine Placed in Service

On December 6, 1860, the first steam engine was placed in service and the second steamer was added in 1862. Laws

(*Continued on page* 507)



Station of Engine Co. No. 12, Crown Street, New Haven

Fig. 1.—Closely Built Frame Dwelling Sections Suffer Severely
This illustration shows what was formerly an attractive residential district, after fire had passed over it. That the fire did thorough work is evident from the fact that no combustible building materials are to be found in the area.

Frame Areas and Conflagrations

Fast Traveling Fires Require Quick Work by the Department — Suggested Methods of Handling

THE spreading fire in a frame area offers the average fire department one of its most serious problems. While the handling of a fire in any single frame dwelling is considered an easy task, once fire involves a large number of buildings in a frame section, the department has a huge job on its hands. For handling a single dwelling fire, water supply is usually plentiful, but as soon as a large area is involved, the limited size of mains, and the distance between hydrants create a very definite handicap to efficient fire department operations. In addition, the distance between companies in residential sections enables a spreading fire to gain considerable proportions before the full complement of apparatus can be assembled.

Structural Weaknesses

Frame residences are inherently fire spreaders. Through the agency of their wood shingle roofs they quickly start new fires from embers falling on them; and they in turn send forth embers as soon as they have become fully involved with fire. Inaccessibility of attics beneath roofs permit fire to gain headway while department is reaching these concealed spaces with the result that a general slowing up of fire fighting operations occurs.

Grass and brush, commonly found on vacant lots between dwellings, also serves to spread fire by furnishing combustible material for embers which may alight therein.

Add to the highly inflammable nature of frame dwellings the possibility of impassable streets, particularly in bad weather, and the ideal situation is created for a conflagration.

Fire is commonly spread by three methods in frame areas: First, by embers, which may travel great distances.

Second, by direct exposure (radiation) to burning buildings;

Third, heat waves (convection), which are carried by the wind to neighboring structures.

Problems the Department Must Face

Probably the most serious problem the department has to face in such fires is the fast travel of fire over large areas. Showers of embers falling at remote points start new fires. Buildings in the immediate neighborhood of the fire quickly become involved due to their inflammable construction and the intense radiated heat and heat waves.

The defective or limited water supply makes long stretches imperative, with the result that, outside of the first alarm assignment, companies can be expected to stretch in but a single line each, and even then may secure unsatisfactory results at the nozzle.

After a number of engines have been placed in service on mains in a given section, hydrant streams are out of the question, due to the drop in pressure in the system. This is caused by long pipe lines, and heavy draft on mains, which results in heavy friction loss. Thus hydrant lines which may be put in service at the start of a fire, are soon useless due to the drop in main pressure, and this results in reduction of pressure at the hydrant.

Fighting the Fire

In order to secure a large stream from deck gun it may be necessary to stretch lines from remote hydrants, placing engines in operation at the hydrants. Thus a deck pipe may require the services of two or three companies, to say nothing of the

Fig. 2.—Here's Where the Department Did Good Work

Despite the fact that two and one half story frame dwellings with wooden roofs completely surrounded this particular fire, the department was able to check it in its progress even though a heavy wind was blowing.

delay incidental to stretching in long lines and getting the engine in operation.

At this point it may be well to mention the comparative worthlessness of dynamite as a means of checking conflagrations in frame dwelling areas. Histories of a number of such fires indicates that dynamite is of little or no value in such operations, and may actually hazardize the men operating at the fire.

Bear in mind that, outside of the first alarm assignment, extra men will be required for each line put in operation. Hence additional calls for help will have to be made at once. It will not be a question of how many pieces of apparatus arrive but rather what strength of personnel and how much hose can be brought into play. These points must be borne in mind when transmitting calls for additional apparatus. Furthermore, the distances which companies other than the first and second alarm companies may have to travel must also be taken into account; by the time the third alarm companies begin rolling in, fire may have had chance to extend greatly and necessitate additional alarms.

If the fire is fast spreading, fanned by a strong wind, early attention will have to be given by members of truck companies to getting the occupants of exposed areas out of the danger zone. This applies particularly to the women and children. Men of the various households may prove of service to the department in patrolling their own and adjacent property to detect fire starting from embers and possibly extinguishing the same.

Contrary to general belief, deck guns are very effective in operating on fires of this sort if they can be put in service promptly. They can reach much farther than hand operated streams and, due to their control, can be made to cover very large areas. Thus deck guns should be put in service at once toward the lee of the fire, but not directly in its path. Streams from the deck pipes should not only be directed on the burning buildings, but should cover exposed buildings as well. The usual method of operating them vertically at times, so that the spray created by them may be carried over a large area by the wind, is very effective. The spray from a stream directed vertically a distance of one hundred feet may be carried as much as five hundred feet horizontally by a strong wind. The benefit of such a spray can be easily appeciated.

Even though the pressure at hydrants may be satisfactory to provide good deck pipe streams at the start, engines should be placed in service at hydrants to give the necessary pressure when pressure in main system drops, due to additional draft on the system through the other lines going into operation.

Hand lines are best operated from the windward side, due to their mobility. They will be helped very much by the wind and close work can be done. Operating from the lee side may be impossible, particularly if the fire has gained considerable proportions and if the heat intensity is great. Deck guns operated from either side of the fire at the lee can do good work in checking its spread.

However, if it is possible to put lines in operation directly at the lee of the fire, this should be done, for it may be possible that such a stand will check further spread of the blaze.

Of equal importance to fighting the fire is the covering of exposures. This consists largely of patrol work and quick extinguishment of any fires starting from embers or from sparks.

Patrol work may be done either afoot or on apparatus. If the area exposed is large, and a heavy wind is blowing, the work will be best accomplished by using the apparatus for patrolling. With the cooperation of property owners in the exposed area, fires can be quickly detected, and with the equipment available on the apparatus, particularly the hand pump extinguishers, small fires may be checked at their start.

One method of covering the seriously exposed building is to stretch a single line of 2½-inch hose from pumper at hydrant and branch it into two 1½-inch lines, each in the neighborhood of 300 feet in length, and using small tips. Two men on each of

(Continued on page 514)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

DEPARTMENTS made up entirely of volunteer firemen or volunteers and call men, depend upon some generally audible signal to notify them when there is a fire, and also for the signal to give its location. This situation brings with it many problems.

Just as soon as the siren or whistle sounds, all the town people who have a phone start calling the telephone exchange to learn whose house is on fire. It is humanely impossible for the operators to take care of the normal business, to notify the firemen who are supposed to have this information, and to reply to the requests of curiosity seekers. In many towns and villages, instructions have been given to the operators not to answer such calls, and to keep the lines open for the regular fire-fighters.

It is to the best interests of the residents to speed information on the location of a fire, to the men who will respond as members of the department. Unfortunately, it requires considerable time to have the general public realize this.

Here Is the Problem

If you employ a fire siren, whistle or diaphone for calling out firemen, what means do you employ for informing them as to where the fire is located?

Do they call up local telephone headquarters for the information?

If you find the telephone central congested by a lot of calls from others than member of the department, after the fire alarm sounds, what method would you suggest for avoiding delay in getting firemen to the scene of the blaze?

The problem in full that is treated in this issue is printed in the box on this page. So many discussions have been received that the problem will be concluded in the next issue. Should you have a question that you would like to see treated in this department, write to the "Round Table Editor," FIRE ENGINEERING, 225 W. 34th St., New York, N. Y.

The Question

All chiefs agree that means must be taken to avoid congestion in the telephone exchange. Trunk line calls must be handled and means taken to call the fire-fighting force. The plans in use now and others that are suggested, contain valuable ideas.

H. W. Breder, Chief, Egg Harbor City, N. J.: We have three sirens located in different sections of the city which are used to call out firemen. These sirens are operated by the telephone headquarters. They can also be blown from a box in front of the fire house. We have twelve boxes in different districts whereby central can be notified of a fire, or the alarm can be sent in from any house telephone. However, we get the best service if central turns on the alarm. While one operator is transmitting the alarm, another is calling the chief's office to give him the exact location of the fire. The operator plugs in for the fire house awaiting their call. When this call is received, the operator gives them the location of the fire. The man at the fire house receiving the call directs the apparatus as they leave the station. He leaves with the last piece of apparatus, which in our case, would be the fourth.

We can call telephone headquarters for information wanted. One wire at the telephone office is held open for information from the chief or from headquarters. We have eliminated the nuisance of everybody calling central seeking information about the fire by instructing the operators not to give such information.

Our fire lines are laid out in four districts. One short and one long blast is given for the first district; one long and one short for the second; three blasts for the third and four blasts for the fourth district. Upon hearing the alarm, each fireman knows just which direction to travel to locate the fire.

In congested districts we have red lights which are turned on by the telephone operator and kept on for five minutes. All traffic is required to stand still for five minutes after the sirens are blown. Firemen using their own cars must display a white flag with red letters "E. H. C. Fire Department" in order to pass signals or enter the fire area.

We have splendid cooperation from the police department. Our telephone company is a local one, cables being run in from all long distance services. The chief of fire department is president of the company, so we come very near doing the things that are to the best interest of the fire department.

W. R. Shaber, Chief, Sparks, Nevada: We used a whistle in this city up to July, 1918. This alarm was given from the telephone office. The division of the city into districts was the only method of giving a general location of the fire. Since that date, this signal was discontinued. The calls were then sent in direct to the fire station. After the equipment left the station, firemen were called by phone and given the fire location. This method has also been discontinued because of the objection of the telephone company's interference with subscriber calls. Another reason why this method was discontinued was due to the fact that a great many calls were received from outsiders asking for information about the fire. This congested the telephone office a great deal.

The following method which I put into practice in 1924 is the one we are now using:

The city installed a two-circuit fire alarm system with nine fire alarm boxes. The boxes are in the business district and at two of the schools. An indicator, a bell and transmitter were installed at the fire house and a gong was installed in my home. In 1927, the telephone company objected to calling the firemen. Sixteen additional bells were then installed in the homes of the firemen.

I then zoned the city, and located and numbered imaginary boxes in different zones, carrying these numbers. When a real box is installed, it takes up the number of the imaginary box.

This department consists of two full time men and seventeen called men so that when a call comes in on the phone, one of the regular men places a code wheel on the transmitter corresponding with the real or imaginary box at the location of the fire.

We have no delays as the trucks proceed direct to the fire. By the time the apparatus arrives there is always enough firemen on hand to assist with the layout and connections.

When the trucks leave the station, they sound the siren. Personally, I do not like the public alarm of any kind. I even restrict my drivers from using the sirens on the trucks on account of the interference caused by automobiles following the apparatus and parking too close to hydrants.

Leroy B. Woodhull, Chief, Dunellen, N. J.: This all important question which you have asked is now before our mayor and council. I might add, that this question of a better fire alarm system came up before the council in a special session May 17th,

We now have a general fire siren with only one button in the borough for transmitting the alarm. In order for firemen to find out the location of the fire they

are compelled to come to the fire house first. Needless to say, this causes a delay.

In sending in a fire call by telephone, we have an arrangement with the New Jersey Telephone Company whereby the fire call is sent to a lunch wagon which is directly across the street from the station, and which has twenty-four hour service. They take the call and send in the alarm. They also transmit the location, by word of mouth. In many instances they get things mixed up and consequently we have to hunt all over town for the fire.

One of the worst conditions the Dunellen firemen have to contend with is that fire siren manufacturers are selling their products to commercial plants. At the present time we have three factories using fire sirens to determine their working hours. Also three neighboring towns have fire sirens, one of which is a code siren.

You can, therefore, readily picture the trouble and delay caused by this condition. When a fire occurs, especially at night, the firemen first call up to find out whether or not it is the Dunnellen siren that is blowing. This naturally causes congestion in the telephone office.

To my mind the only solution to this problem is to install a coded siren which can be operated by a central transmitter in police headquarters.

J. P. Wade, Russellville, Ala.: We employ a siren to announce the call of fire. This siren is located on the top of the city hall. Calls are sent in by telephone by calling "Fire Department." The alarm is usually answered by our city clerk or mayor.

Our city is divided into wards.

The local telephone company is not allowed to tell anyone where the fire is. This is done in order to keep the public from the scene of fire.

One fireman remains to receive the exact location of the fire. After this call is received, he goes to the fire with me.

I believe we have an ideal arrangement. Our department, of course, is volunteer.

L. G. Kruel, Chief, Washington, Mo.: We installed a fire siren about two years ago which is used for calling out the firemen. From past experience, we have found this is the best arrangement since our city has a volunteer company of over one hundred members.

We are operating our plan through the local telephone system by having the alarm button in the telephone office. This gives us twenty- four hour service.

When an alarm is received, the operator gives one, two or three blasts indicating just what part of the city the alarm comes from. At the same time the chief and other officers are called by telephone. We have five stations in different parts of the city which are equipped with telephones and which are all on the same telephone board at the exchange. Any fireman arriving at his nearest station first secures information as to the location of the fire and then goes with his equipment.

All other phone service is suspended for a minute or two by the operator until the information has been given to the stations. In this way, firemen go to their stations instead of getting the information over different phones. This also prevents the public from calling central for information about the fire and causing congestion at the telephone office. I find this method very effective in avoiding delays.

F. C. Krenkel, Chief, Winnemucca, Nev.: We operate a Gamewell siren which gives three alarms. Our city is divided into twenty-four districts. Each district is so arranged that it comprises two blocks on each side of the street. Or, in other words, a district has a radius of four blocks. Every district has a number and is handled by the telephone company. Whenever an alarm is reecived, central puts the proper disc on the diaphone and the siren is sounded.

Immediately after the siren has been sounded, the operator calls headquarters and informs us where the fire is. Our entire department is volunteer with the exception of one man, the driver, who lives at headquarters. However, all the firemen have memorized the districts so they know immediately in just what district the fire is.

Each telephone in the different districts is supplied with a card giving the name of the districts. Next to the particular district in which any person is located, the cards read "in case of fire, ring central and tell her that a fire has started in the district you are in." In this way, anybody turning in an alarm knows just what district he or she is in. We have found this to be a very satisfactory system. This method has saved the city lots of money. Our total fire loss for the past two years will not exceed one thousand dollars.

When the siren sounds, the firemen respond to the fire house, or, if the trucks have left, they go to the blaze. As a general rule, after an alarm is sounded the department arrives at the scene of fire within three or four minutes.

C. H. Knowles, Chief, Hamilton, Mass.: We have an assembly call box located at the grade crossing near the railroad station, where a gateman is on continuous duty. Fire calls are handled through the telephone company exchange by a direct wire to the railroad crossing shanty where the gateman sounds the alarm box.

The first man arriving at the engine house enters the telephone booth and receives from the operator the exact location of the fire and the type of fire reported. He then opens the manual cabinet and places a district call disc on the spindle and pulls the hook. The district call is, therefore, only a minute following assembly.

Our system is powered by the electric company with a compressed air whistle on the tower of the engine house. The tapper service is spaced at given second intervals which allows very quick response.

Five engineers, a captain, two lieutenants and twenty-five privates compose the call department. Fourteen men are licensed drivers of fire apparatus. They are under the control of the captain who is chief driver.

We receive one hundred per cent cooperation from both the telephone company and the railroad. The telephone company always sees that the lines are clear and does not give information regarding fires to anyone except police officials.

Laroy Carothers, Chief, Bremen, Ind.: Our alarm is a wild cat whistle located at the power plant, blown by compressed air. The alarm is given by blowing a general alarm followed by short blasts indicating the ward in which the fire is located. This is repeated twice.

When an alarm is sounded, the telephone operator calls the chief and also the driver on duty.

The telephone company does receive a great many calls for information regarding the fire. However, we have seventeen members in our department and their numbers are marked on the telephone switchboard. When calls from these numbers are received at the telephone office, they are given immediate attention.

Elmer C. Doherty, Chief, Lambertville, N. J.: We use a whistle connected to a Gamewell system of boxes, twenty-four in number. The whistle is placed on a manifold and consists of one high tone and one deep tone, and is mounted on a pipe direct from the boiler room which never has less than one hundred pounds of steam.

Our men do not call up the local telephone headquarters for information regarding a fire. The telephone is all right in its place, but it is not intended for a fire alarm. When my number is called we never have any trouble. The central office knows that my line is to be kept open until I have sent out as many companies as I believe are necessary.

Frank McDonnell, Chief, Tonopah, Nev.: This is a big silver mining camp in a large canyon. We have a fire siren on the central fire station which gives one long blast for all fires. We also have a large siren on one of our trucks which can be used to call help.

Our department consists of five paid men and twenty-

(*Continued on page* 517)

We Thank You!

Due to the large number of replies received, this discussion has been divided into two parts, and the concluding part will appear in the next issue.

How a Well Drilled Salvage Corps Works

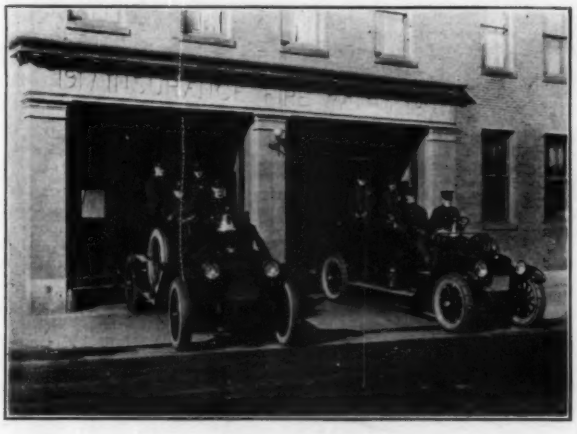
Effective Salvage Work by Worcester, Mass., Insurance Fire Patrol Tribute to Skill of Superintendent Guertin—System of Records

By HARRY BELKNAP

THE Worcester, Mass., Protective Department, better known as the Insurance Fire Patrol, was incorporated in July, 1875, and the patrol was placed in operation on December 1 of that year.

The first wagon carried 24 salvage covers and was drawn by two white horses named "Buffalo Bill" and "Texas Jack."

The first patrol station was in an old barn owned by Isaac Davis in what is now Barton Place. In 1884 a new station



The Worcester Fire Patrol

was secured 50 feet east of the first one. This building was remodelled and made three stories high in 1889.

In these early days the patrol was in charge of the late Capt. Hiram R. Williamson, who was superintendent from the date of organization until he retired on account of illness in 1922. He died on November 28, 1923.

The headquarters was moved to the present site at Exchange and Commercial Streets on March 30, 1918, a brick building being remodelled. In 1907 an automobile patrol, consisting of a Thomas Flyer carrying 24 covers, was placed in service and the horses were retired. This was the first piece of motor fire apparatus in the city of Worcester. It replaced the wagon that was then being drawn to fires by "Dolly" and "Daisy," two handsome black horses.

In 1921 a G.M.C. truck was added and on November 25, 1925, a new Ahrens-Fox wagon was placed in service. It weighs seven tons and carries 50 covers. This piece of apparatus has proved highly efficient and has covered over 10,000 miles, averaging more than 2,000 miles a year. It covers a territory of 38 square miles. answering every bell alarm in the city besides many still alarms and special calls.

Officers and Upkeep

The Worcester Protective Department, which operates the Insurance Fire Patrol, was organized and is managed by the agents of stock insurance companies and some mutual fire insurance companies doing business in Worcester.

E. L. Sanders, of the Merchants' and Farmers' Life Insurance Company, is president; Conrad C. Parker is secretary; and Harry Harrison, of the Worcester Mutual Insurance Company, is treasurer.

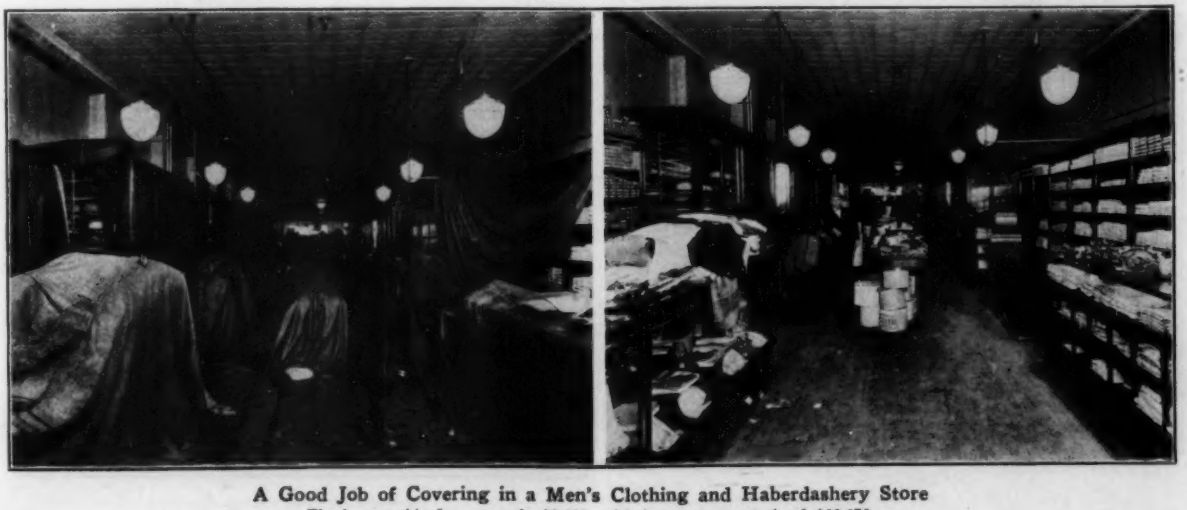
The yearly upkeep and maintenance of the patrol amounts to about $34,000, of which sum the city pays $10,000. Charges are made for calls to water leaks and defective sprinklers not insured at the rate of $10 per call and a charge of $1 is made for each cover laid in such cases. There is no charge for response to fire calls.

Growth of New Haven Patrol Work

The growth of the work of the patrol is shown by the following: In the first year of its operation the patrol answered 12 alarms. For the year ending June 30, 1928, the patrol answered 638 bell alarms, 152 still alarms, 35 American District Telegraph calls, and 61 water leak calls. There were 1,734 rubber covers spread, each 12 ft. by 18 ft., on property inside of buildings, also 400 covers spread on Noch's property, and many roof covers, 12 ft. by 12 ft. There were also laid 531 yards of tar paper on roofs and for door and window patches. Fifteen fires were extinguished by using 31 three-gallon chemical extinguishers. The time worked at fires was 557 hours and 40 minutes, with 160 hours and 45 minutes extra duty picking up covers. There were 184 bags of sawdust used.

The patrol now has 350 double coated rubber covers and 25 canvass roof covers. Response is made to still alarms for fires within three-quarters of a mile of headquarters.

John Yatter, of 175 Highland Street, Worcester, the only member of the original patrol company now living, is presi-



A Good Job of Covering in a Men's Clothing and Haberdashery Store

The loss at this fire was only $2,319, with insurance on stock of $33,270

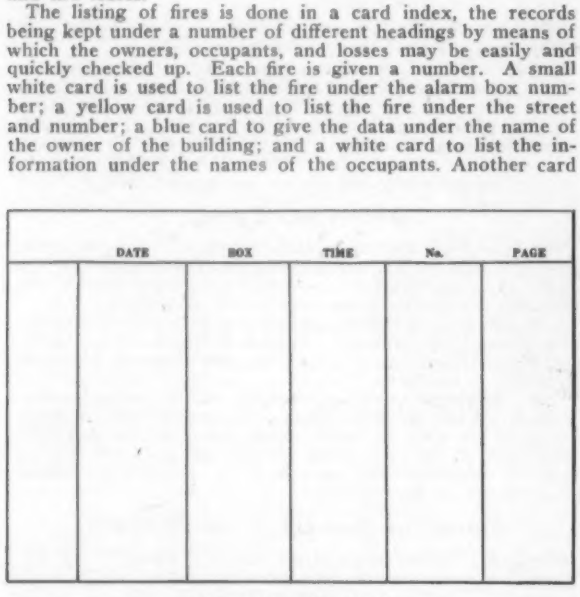
dent of the Past and Present Members' Association, which was organized in 1921.

William H. Guertin was appointed to the force as a call man on January 1, 1889, and was made a permanent member in 1896. He became superintendent in 1922.

The Record Keeping System

Since that time he has instituted many improvements in the service and devised a record keeping system that is a model for accessibility and completeness of data as to fires and fire losses.

The listing of fires is done in a card index, the records being kept under a number of different headings by means of which the owners, occupants, and losses may be easily and quickly checked up. Each fire is given a number. A small white card is used to list the fire under the alarm box number; a yellow card is used to list the fire under the street and number; a blue card to give the data under the name of the owner of the building; and a white card to list the information under the names of the occupants. Another card



DATE	BOX	TIME	No.	PAGE

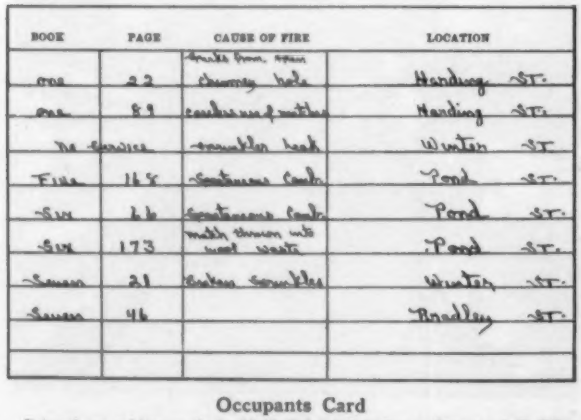
Street Location Card

Printed on buff card, in black ink, 6x4 inches

is kept to record deaths by fire. This makes a total of five card files.

Two report summaries are made for each fire. One of these is for the agent to fill out and is delivered to him by the superintendent. The other is kept at headquarters until the first form is returned with the name of the company carrying the insurance, the amount carried, and the amount paid. With the year ended there have been 2,666 losses from fires that the fire department responded to, also 270 losses where there was no fire department service. Superintendent Guertin can give the exact amount that was paid on each loss.

A very complete and exhaustive report is made out after each fire and this is copied in a record book and in a final ledger giving the loss and insurance paid. The ledger sheet measures 38 inches wide by 12 inches deep, is ruled in red and blue and is headed "Daily Report of Fires, Alarms, In-



BOOK	PAGE	CAUSE OF FIRE	LOCATION
1928	22	Smoke from steam chimney hole	Harding ST.
1928	89	Careless use of matches	Harding ST.
No Service		Sprinkler leak	Winter ST.
Fire	165	Spontaneous Comb.	Pond ST.
Still	66	Spontaneous Comb.	Pond ST.
Still	173	Rubbish thrown into heat waste	Pond ST.
Saw	21	Broken Sprinkler	Winter ST.
Saw	46		Bradley ST.

Occupants Card

Printed on white card, in black ink, 6x4 inches. Owner of Building Card is same size and style, except that "Owner's Name" takes place of column "Occ. Name" and it is printed on blue card.

surance and Losses in the City of Worcester—192...." The headings of the various columns are as follows:

DATE. TIME. ALARM BOX—Still or A.D.T. LOCATION. CLASS OF BUILDINGS—Wood, Brick, Cement, Stone. NO OF STORIES. HOW OCCUPIED. NAMES OF PARTIES SUSTAINING LOSS—Owner of Building—Occupant. CAUSE OF FIRE. NAME OF COMPANY. BUILDINGS—Insurance—Ins. Paid. CONTENTS—Insurance—Ins. Paid. BLANKET POLICIES—Insurance—Ins. Paid. EXPOSED LOSSES—Buildings—Contents. LOSSES—NO INSURANCE—Buildings—Contents. COVERS SPREAD—Insured—Not Insured. ROOF COVERS. TAR PAPER—Use Yards. FIRES EXTINGUISHED. EXTRAS USED. SPRINKLER HEADS REPLACED. TIME ON DUTY—Hours—Minutes. EXTRA DUTY—Hours—Minutes.

Specimen Reports of Fires

Below are given two specimen reports taken at random from the records, showing the thoroughness of the data contained therein:

February 12, 1929.

Car Ahrens-Fox

A.D.T. 221. Time 11:04 P.M. Out 2 hours & 30 min. Fire in a can of rubbish in the Republican City Committee room on the fourth floor of the Day Building at 306 Main Street which set off two sprinkler heads doing considerable water damage to the floors below this floor. They are insured by B. B. & B.

It was a five-story building owned by the Day Trust insured by L. Thurston. Also one door broken besides the water damage.

Occupants with water damage: Buffington's Inc., a drug store insured by McPherson, first and second floor, slight water on the first floor, 300-306 Main Street; Worcester Rubber Co., insured by Worcester Mutual and Ingraham & Parker, water in front part of store only, 302 Main Street; Iver Johnson Sporting Goods Co., insured by Ingraham & Parker, Charles Grant and Bullock, water damage in center of store.

Spread 36 covers and used 12 bags of sawdust.

Cause: cigarette in sweepings.

Two sprinkler heads put out fire.

August 6, 1929

Car Ahrens-Fox.

Box 621. Time 1:28 A.M. Out 1 hour & 20 min.

Fire started either in kitchen or back piazza at 8 Assonet Street, kitchen gutted, kitchen table, 3 chairs, ice chest, total loss. Trunk in kitchen containing clothes all covered with kerosene oil, but not burnt. Bed room off from kitchen, bed clothes and mattress and mattress on cough totally burnt. Bureau blistered, glass cracked from heat. Small rug and some clothes burnt. Another bed room, bureau blistered, bed clothes blackened from smoke, which we covered with our blankets. Dining room sideboard and china closet blistered, pictures on wall cracked from heat. Furniture was covered, no water damage, rug on floor wet, bed room in front room blackened from smoke, no clothes in closet. No water damage. Sitting room from dining room, parlor suite 3 pieces blackened from smoke, no water, damaged clothes in closet from smoke, not wet. Front room and this room were also covered. There was a strong odor of kerosene oil in all rooms. First floor vacant, straw mattress on floor covered with kerosene but not burnt. Giovannia & Giulia Rano owned the building and occupied the second floor. 2½ story wooden building. Insured by Duprey & Stoddard.

Building	Contents
Insurance 5,000	2,000
Assessed for 2,000	

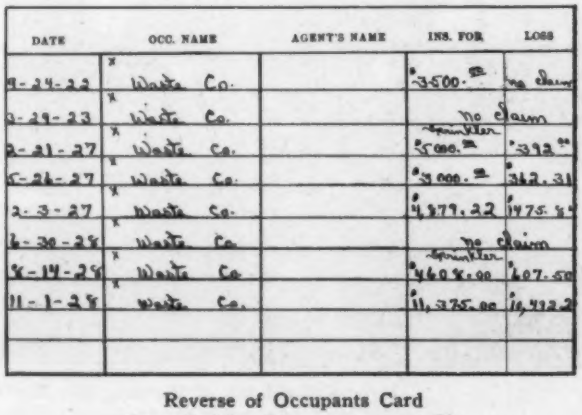
At time of fire they were at 373 Shrewsbury Street, a brother of his. We have had three fires at this address (373 Shrewsbury Street) two of them incendiary.

Used water lines.

Spread 4 covers and used 14 yds. of tar paper.

Cause: incendiary.

(To be continued)



DATE		OCC. NAME	AGENT'S NAME	INS. FOR	LOSS
9-24-22	X	Waste Co.		$3500.	No Claim
9-29-23	X	Waste Co.			No Claim
2-21-27	X	Waste Co.		Sprinkler $500.	$392.00
5-26-27	X	Waste Co.		$3000.	$362.31
2-3-27	X	Waste Co.		$4279.22	$1975.45
6-30-28	X	Waste Co.			No Claim
8-14-28	X	Waste Co.		Sprinkler $4698.00	$607.50
11-1-28	X	Waste Co.		$1,375.00	$1,412.2

Reverse of Occupants Card

Owner Card has the same reverse as this.

What Should Modern Rules Include?

Rules and Regulations Covering Duties for Truckmen and Mechanics or Helpers Considered—Seventeenth of Series

IN this installment of the series of articles on the rules and regulations of fire departments are considered the rules pertaining to truckmen and to mechanics or helpers. There are six rules regulating the duties of truckmen and twelve for mechanics or helpers in the forty-one reports analyzed, as against twenty rules for drillmasters, eleven for chiefs' aids or drivers and ten for pipemen, hosemen and hydrantmen, considered in the last issue of FIRE ENGINEERING:

Truckmen

In six of the forty-one departments considered the following rule is incorporated:

"Truckmen shall also perform such other duties as may be required of them by their superior officers, or the rules and regulations of the Department."

Three of the departments consider the following rule essential:

"It shall be the duty of truckmen to keep quarters, apparatus and equipment in a clean and serviceable condition and perform all other duties assigned them in or out of quarters."

This rule is enforced in two of the departments:

"When a truck company is not called into action, its members shall remain near their apparatus unless otherwise ordered."

The rules which follow have been found listed in but one city each:

San Francisco, Cal.

"Truckmen shall respond to all alarms of fire as prescribed for their companies and in every case they shall conform to and promptly and cheerfully obey all orders of their superior officers."

Pittsburgh, Pa.

"Truckmen shall be on duty at their respective quarters at all times, except when detailed elsewhere or at fires."

St. Louis, Mo.

"In the absence of the Captain and the Lieutenant the senior truckman shall perform their duties."

Mechanics or Helpers

In five of the forty-one departments considered the following rule is incorporated:

"Machinists shall perform such duties as may be prescribed by the Supt. of Machinery. They shall be held responsible for the proper care and safe keeping of tools and supplies entrusted in their care."

Two cities have incorporated the following rule:

"Mechanicians shall respond to all second, third and fourth alarms. At fires, each apparatus will be visited and adjustments or changes made to enable the operator to obtain the best results possible."

The rules which follow have been found listed in but one city each:

Utica, N. Y.

"The time of work, hours for meals and time off duty for mechanicians shall be designated by the Chief Engr. or Deputy Chief in charge."

"Mechanics shall inspect apparatus every two weeks and make note of condition of same. The report must be filed at the Bureau Headquarters on the 2nd and 17th of each month."

"When apparatus is sent to the shop for repairs the mechanician shall see that the work is well and properly performed; that no unnecessary expense is incurred and that the apparatus is returned for service as quickly as possible. No expense is to be incurred without the consent of the Chief or Deputy Chief in charge."

Akron, Ohio

"Mechanics shall be subject to the same rules as to uniform, conduct, discipline, and offenses as are provided for the members of the Fire Department generally."

"In no case and under no circumstances shall mechanics perform any work for any person, company or corporation, not connected with the Department, without orders from the proper authorities."

Oklahoma City, Okla.

"Mechanics may be required to man reserve apparatus or perform such other duties as from time to time they may be directed by the Chief Engineer."

"Mechanics shall not be required to be in uniform while working on cars or apparatus or are on duty in the repair shop."

"Mechanics are subject to all the rules governing the department and such other rules or regulations as may be imposed upon them by the Master Mechanic."

Milwaukee, Wis.

"A mechanic shall not absent himself, leave his work or the shop during the specified hours except by permission or direction of the Supt. of Machinery and it shall be the duty of each employee, upon the completion of any work that he may have been ordered to perform, or in the event of his meeting with any unforeseen difficulty in its performance, or requiring further instructions, to promptly report same to the Supt. of Machinery."

"Mechanics shall be subject to a call for duty at any time."

(To be continued)

N. E. Space Reservations Increasing

The number of applications for space received by John S. Pachl, chairman of the exhibit committee of the New England Association of Fire Chiefs, has made it necessary to secure the Governor Foot Guard Armory, adjoining the Second Regiment Armory where the main exhibits will be on display.

The annex makes eight hundred additional square feet of space available. The two armories are connected by a six-foot door so that access can be had from one to the other without any difficulty. There will be eight exhibit spaces in the annex each measuring ten by 9½ feet.

For information concerning the exhibits at the convention of the New England Assocation of Fire Chiefs, New Haven, Conn., June 25-27, write to John S. Pachl, Chairman Exhibit Committee, Annex Fire Department, New Haven, Conn.

Beaver, Pa., Makes Appeal for Relief Fund—Firemen in Beaver, Pa., are trying to collect funds for the relief treasury to aid sick members or those injured in line of duty.

York, Pa., Chief Fined for Parking Rule—Chief L. E. Wagner of York, Pa., rushed into the courthouse to attend to some business and left his car parked in front of a hydrant. When he came out he found himself under arrest. He was fined the customary two dollars for the first offense.

Barberton, O., to Add Six Men—Six men will be added to the fire department of Barberton, Ohio. The city is being inspected by the Ohio Inspection Bureau.

New Fire House Opened in Memphis Tenn.—A new fire house has been officially opened in Memphis, Tenn. The public were invited to a barbecue supper and were taken on an inspection tour of the building. Dancing concluded the program.

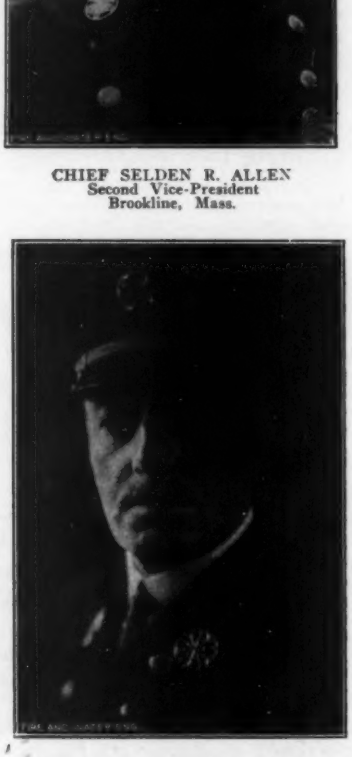
CHIEF OLIVER T. SANBORN
President
Portland, Maine

CHIEF JOHN W. O'HEARN
Secretary-Treasurer
Watertown, Mass.

CHIEF SELDEN R. ALLEN
Second Vice-President
Brookline, Mass.

CHIEF CARL V. STOCKWELL
State Vice-President
Burlington, Vt.

CHIEF VICTOR H. VEIT
State Vice-President
Stamford, Conn.



CHIEF ARTHUR W. SPRING
State Vice-President
Laconia, N. H.

CHIEF W. C. SHEPARD
Ex-President
Pittsfield, Mass.

CHIEF DANIEL R. TIERNEY
State Vice-President
Arlington, Mass.

CHIEF PATRICK J. HURLEY
Ex-President
Holyoke, Mass.

OFFICERS AND EX-PRESIDENTS NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

WITH THE EDITOR

The New England Fire Chiefs' Convention

A splendid record is embodied in the six years which span the history of the New England Association of Fire Chiefs, which will hold its seventh annual convention on June 25 to 27, at New Haven, Conn.

At the first meeting in Boston, on July 12, 1922, when it was voted to form the association, there were some fifty chiefs present. With the second convention held in Bridgeport, it had jumped to two hundred. In 1928 the total membership was officially announced as 559, a most remarkable growth in so short a period of time. Financially, too, the association is sound. On June 15, 1928, Treasurer O'Hearn announced a cash balance of $11,990.21.

The conventions of the New England Chiefs have been notable affairs from the start, both as regards the practical side, in the matter of excellent papers and lively discussions on matters of importance to the fire-fighting profession, and also as to entertainment, which at each yearly gathering has been lavish and enjoyable.

One of the features that has been of particular interest and has proved successful from the start has been the very well arranged and full line of exhibits by manufacturers of apparatus and equipment. These have, as nearly as possible to provide, being held as close as convenient to the headquarters and meeting halls of the various conventions, and the result has been an unusual interest in this feature by the chiefs present.

A large amount of credit for the remarkable success of this association is due to the work of its indefatigable Secretary-Treasurer, Chief John W. O'Hearn, of Watertown, Mass. Chief O'Hearn was elected to these offices at the first session of the association in 1922, and has been successively re-elected each year. His labors for the association have been equally efficient and self-sacrificing, and he has consistently set the ideal for its work as the highest attainable. That he has lived up to this standard his work for the association and its results demonstrates.

It is safe to predict that the 1929 convention will sustain the high reputation of this association.

Do Merit and Efficiency Count?

In some cities, apparently, they do not! This fact has been emphasized by recent occurrences in a certain municipality, in which politics seems to far outweigh any other consideration in the conduct of its Fire Department's affairs. As the result of a change in the political complexion of the city's government, the chief retired after thirty-nine years of service in the department, four of which he had been at its head.

This city has as its Assistant Fire Chief a man who is looked upon by those in a position to know, as not only the most efficient officer in the city's fire-fighting ranks, but, practically, as the brains of the department. This man has had the experience of seeing, in his ten years service as Assistant Chief, four men appointed from the ranks over his head as Chief of the Fire Department. He apparently lacks the political influence to put him in the post he is so well fitted to fill.

It was hoped in the last shake-up of the department that the authorities would appoint him as chief, but the usual thing happened, and a man with no executive experience was appointed from the ranks of the department. This appointment was made, furthermore, over the protests of the business elements of the city.

It is conditions of this sort that militate so strongly against the efficiency and discipline of the politically ridden fire department. The men cannot properly respect the man who they are well aware owes his job to some political influence and not to any especial merit or experience of his own. Until this sort of thing is entirely done away with in the fire department, perfect efficiency cannot be hoped for.

Fire Prevention and Forest Conservation

In a statement issued by the New York State Education Department, a forester of that state calls attention to the very serious situation that is rapidly approaching in this country—that is to say, the time when our forests will have been so far reduced in area and productiveness that we will have to seek elsewhere for the needed supply of wood for all purposes. One of the most destructive elements in this effect of denuding the forests is that of fire.

This individual divided the trend of events in countries well blessed with forests into five periods. The first of these is when the forests are looked upon as "inexhaustible," and are treated accordingly; in other words, when cutting and burning is allowed to go on indiscriminately and without regard to conservation.

The second period is when there is still great forest wealth, but this is confined to certain localities, so that a portion of the people remote from

these supplies are compelled to pay high prices for the timber.

The third period arrives when there are reasonably good supplies of timber, but so badly mismanaged that the situation is full of alarm to those who are experts in such matters. This period, he says, is now with us.

The fourth period—the one which now threatens unless conservation is rigidly practiced—is, with rapidly diminishing supplies, a serious shortage caused by fire waste and waste in improper cutting.

The fifth he designated as the faggot gathering stage, in which the sight so familiar abroad among the peasantry of gathering small branches and cuttings for domestic fuel will be duplicated here. At this stage, he says, if not before, the government will be compelled to take a hand in the conservation of the pitiful remnant of wooded lands which are left.

However, before this lamentable condition arrives, it would be well for the state and national governments to take hold of the situation. In fact, this already has been done in the case of the National Parks—which, by the way, are constantly being added to—and in the case of the states in restrictive legislation governing fire precaution in forest lands, especially in the case of those publicly owned.

Educational propaganda for automobilists who picnic in or pass through forest lands are constantly being distributed, in which the danger of the carelessly tossed match or cigarette, the unextinguished camp fire, and other causes of conflagrations are especially stressed.

In an increasing number of states such carelessness is considered a misdemeanor and is punishable with fine or imprisonment or both. Certainly, where it is not thus treated, the laws should be revised so as to make the punishment fit the crime. They should not alone be placed upon the statute books—they should be rigidly enforced. A few severe examples made of careless individuals, well aired in the daily press, would have a salutary effect upon the indifferent, and would reduce to a very great extent this source of the destruction of our forests, so invaluable to the nation.

Brooklyn Firemen Have Busy Session

Forty fire alarms turned in during a period of three hours, kept the New York Fire Department of the Borough of Brooklyn exceptionally busy.

Five alarms were sounded for a fire in a double apartment house under construction. A brisk wind carried sparks over to a garage and started roof fires in three frame dwellings, all trifling blazes. Embers were carried one-fourth mile away to the army reservation at Fort Hamilton. A one-story warehouse of the Quartermaster Corps was burned and it was necessary for the soldiers to call city firemen. Two alarms were turned in.

While these two fires were being fought, alarms were being turned in on an average of one every five minutes.

Willard, O., to Buy Pumper—Willard, Ohio, will purchase a 750-gallon pumper and will float a $10,500 bond issue to finance it.

Winnipeg Claims Youngest Fire Chief

For large size cities, Winnipeg, Canada, believes that it has the youngest fire chief. D. A. Boulden, head of the fire department, is thirty-six years old and is in charge of a force consisting of three hundred men and officers.

Chief D. A. Boulden, Winnipeg, Man.

He joined the Winnipeg Fire Department on May 1, 1912, and served as pipeman until he went overseas with the Canadian forces. He returned to his former position in 1919.

When Ex-Chief Buchanan retired on a pension, the city council invited applications for the vacated post. Boulden was chosen from the large number of applications received.

Chief Boulden has brought about a number of changes since taking office. He formed a fire prevention bureau, and last year, Winnipeg was second in Class A cities in the Dominion for Fire Prevention activities. Last summer at the Kingston convention, Boulden was elected Provincial Vice-President of the Dominion Association of Fire Chiefs.

A local newspaper spoke editorially of Chief Boulden as follows:

"The remarkable opportunity that has so suddenly come to him is also one that comes to few young men. He has a great chance to show what energy and initiative can do and it will be generally hoped that the faith has been shown in him will soon be changed to complete confidence."

Dominion Chiefs to Meet in Cobourg

The twenty-first annual convention of the Dominion Association of Fire Chiefs will be held in Cobourg, Ont., Canada, July 9-12. A change has been made in the convention hotel. The Hotel Arlington, originally designated as the headquarters, is under construction and will not be opened in time, and convention headquarters will be at the Cedermere Hotel. This is close to the convention and exhibit halls and delightfully situated on the lake front.

Chief James Armstrong, Secretary, Dominion Fire Chiefs

With the exception of one hotel, all operate on the American plan with rates of four to five dollars a day at the Cedermere Hotel, and more modest rates at a number of other good hotels. Rooms are also available in private houses.

No charge will be made for exhibit space. Those interested should write to Chief R. Dey, Pembroke, Ont., chairman of committee on exhibits.

At this convention, an amendment will be considered that will reduce the annual dues from five to four dollars a year; also one to amend Article 2 so that there will be a nominating committee of five members appointed annually by the president.

Chief James Armstrong, Kingston, Ont., is secretary of this association.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Use of Nozzles, etc.

To the Editor:

I will appreciate very much if you will answer the following questions for me in your Questions and Answers column.

H. M. W.

Question 1. What instructions would you give a recruit in the following:

(*a*) Use of pipes and nozzles.
(*b*) Entering a building charged with smoke.
(*c*) Care of roof lines.
(*d*) Making siamese connection.

Question 2. You answer an alarm of fire at 2 a. m. in a three story tenement house. Fire has gained considerable headway. The roofs of several buildings in the vicinity have ignited from sparks. You are in charge for 15 minutes. State in detail your actions until the arrival of a superior officer.

Answer 1: (*a*) Instructions in the use of pipes and nozzles would include: Proper types of nozzles to be used for different purposes, including open nozzles, shut-off nozzles, cellar and sub-cellar pipes, partition nozzles, play pipes with holders, chemical nozzles, and other special types of nozzles and pipes. Instruction would also include full data on the proper method of manipulating these various nozzles and pipes, and the results secured therefrom; proper pressure, placement, methods of supporting, etc.

(*b*) Instruction to a recruit in entering a building charged with smoke would be as follows: Keep clearly in mind the path which would be followed in getting out of the building in an emergency; in case of lights going out, follow line of hose to outside; if smoke is overbearing, keep near floor, and near nozzle, for in this way if there is any air available it will be secured; be wary of hanging wires, or other electrical equipment, and be on the alert for open trapdoors or other openings through which a person may fall. Keep with the other members of the company; do not stray away.

(*c*) Before hoisting lines to roof, make sure that connections are tightly made so that there will be no danger of them uncoupling; use hose roller, for hoisting, if available. If not available, then before employing line on roof, properly protect the line where it crosses the cornice, wall, etc., to prevent injury to hose when put under pressure. Make sure that there is sufficient hose on roof to afford mobility of line. If the line is stretched up a building so that more than one length is required to reach from the street to the roof, the usual practice is to support the hose with hose strap under each coupling. Such straps in turn should be attached to fire escapes, window braces, etc.

When the line is put in position make sure that it is properly secured with roof rope, fastened to pent house, or other secure foundation. If roof is ice-coated, or slippery, it may be necessary to secure the line so that there will be no danger of the nozzle getting away. To do this, the nozzle may be fastened with rope to some secure support, or may be made safe by using dog chain on hose a short distance back of the nozzle.

(*d*) Make siamese connection near the fire rather than near the pumper. By this means the full benefit of the reduced friction loss in parallel lines will be secured. If siamese fitting without clapper valves is being employed, maintain pressures at pumps (if the layouts are similar) as nearly equal as possible.

Where siamese fittings with clapper valves are employed, the clapper valves will take care of burst lines, stalled pumper, or other troubles which might put one of the engines out of operation. Use siamese lines for long stretches, or where large streams are desired.

Answer 2. Although the problem does not explicitly state such, it will be assumed that at the time fire is discovered the tenement house is well filled with occupants, and that they have not been apprised of the fire. Under these conditions the life hazard will be extreme. The fire hazard will also be severe due to the exposure fires caused by embers.

Assuming that I am the first officer to arrive, and roll in with the first engine company on a box alarm, and that I am followed by two other engine companies and two ladder companies, my operations would be as follows:

Life hazard must receive first consideration. First engine company will therefore be ordered to stretch in two lines to the stairwell, and kill the fire around the stairwell, if such is possible. If the fire has originated in the basement, one of the lines will be assigned to cover the door leading to the basement within the building.

First truck company will be ordered to send two men to the roof at once to ventilate by opening up over stairwell, and removing hatch covers from roof.

Balance of ladder company to go through the building, and, by using stairways, if such are available, get all tenants to the street. If stairways cannot be used, then ladders will have to be placed front and rear in attempt to get the people out of the building to safety. In any case, ventilation and prompt use of streams to hold the fire are absolutely necessary.

If there are buildings on either side of the fire building through which persons may get from the upper floors of the tenement house, these means would be employed.

If necessary in the operation of saving life, second due engine company would be ordered to stretch in line to operate at such point as conditions require.

If line is not immediately necessary in the saving of life, this company would be assigned to covering exposures to neighboring buildings, where roofs have already ignited from embers.

In accomplishing this, a single line may be stretched from pumper, and branched into two small diameter lines with small nozzles for covering the various roofs.

Third engine company would be placed in similar service.

Upon the arrival of additional apparatus, it would be assigned to operate on the fire, and all efforts would be made to hold the fire from extending until the arrival of a superior officer.

Crude Oil Tank Boil-Overs

To the Editor:

Kindly answer the following at your convenience.

Crude oil in tanks while afire may boil over of its own accord.

"A" says yes.

"B" says no. "B" says that moisture and water collected at the bottom of the tank will cause the oil to boil over. The water and moisture even though they come with the crude oil cannot be classed as crude oil, for both are separate ingredients.

"A" says that when you say crude oil you include water, mosture, etc. Also that crude oil will boil over even when moisture or water is absent."

Answer: "A" is correct. Note the following quotation from a report by a sub-committee of the American Petroleum Institute:

"Experimental work has showed the boil-over hazard to be present in crude oil. This fact is borne out by the actual fire record of crude tanks as reviewed by the committee.

"Crude oil has the highest fire loss ratio (of petroleum

oils). It is subject to boil-over and has caused fire spread in many instances."

"The record on effectiveness of fire walls shows that out of 242 crude oil tanks that burned, in 75 instances the fire walls as constructed and maintained were ineffective in preventing the spread of burning oil. On the other hand, in 56 cases the walls were effective. For fire walls capable effective. For five walls over 150% of tank capacity (and shows 46 cases when these walls were ineffective in holding crude oil boil-overs, and 39 cases where such walls were effective. For fire walls over 150% of tank capacity (and in the following cases cited, the capacity was 200%) the record shows 10 cases when the fire wall did not retain the boil-over, and 9 cases when it did. These figures clearly demonstrate that capacity alone is not a measure of fire wall effectiveness.

"The statement is confirmed by the experiments conducted by the Standard Oil Company of California which have been referred to, but these experiments further demonstrate that the design and location of the fire wall with respect to the tank are items of fundamental importance. The principal factor in design is the inclusion of some form of coping on the top of the wall, projecting inward, the purpose of which is to turn the advance wave of the "boil-over" back on itself. To obtain full value from such coping, the experiments demonstrated that the fire wall should be located approximately one diameter from the tank, and in no case nearer than 50 feet to a tank 30 feet high."

From the above it is evident that crude oil in tanks while afire may boil over of its own accord.

To be purely technical, assuming that the crude oil has no impurities, which is rarely the case, it is unlikely that boil-overs would occur.

Boston Plans for New Fire Station

Mayor Malcolm E. Nichols and Fire Commissioner Eugene C. Hultman, of Boston, Mass., have approved plans drawn by George Ernest Robinson, architect of 80 Federal Street, Boston, for a new firehouse to be situated in Bowdoin Square to house Engine Company No. 4, now in an old house in Bulfinch Street, Engine Company No. 6, now in Leverett Street, West End,

Architect's Drawing of Bowdoin Square Station

Ladder Company No. 24, at present on North Grove Street, Water Tower No. 1, now at Forth Hill Square, and the district chief now stationed with Engine 4.

This new building will be one of the largest and most elaborate structures in America devoted to fire department use. It will be of handsome appearance with large pillars and seven doors for the passage of apparatus. The location is the site of the famous old Revere House and faces on Bowdoin Square. The cost of the land and building will be $650,000.

Every modern convenience will be provided for the firemen in the new house including a tiled porch for recreation purposes, billiard, pool, and game rooms, library, study rooms, gymnasium, and kitchen.

Because of the special truss construction the apparatus floor will be free of supports or posts. Owing to the contour of the lot the building will have a slightly curving front on Cambridge Street, facing the square. The building will be 134 feet wide on Cambridge Street and 112 feet in depth on Bulfinch Street. Fire resistive materials are to be used throughout.

The basement has been planned to provide three bowling alleys with provision for later installation of three additional alleys. In the basement will also be hose racks, clothes dryer room, meter room, and toilets with boiler and coal pocket in separate division.

The apparatus room on the first floor will be 129 feet wide and sixty-eight feet deep with seam faced granite walls and coffered ceiling treated in colors. In the rear of the apparatus floor will be an open workshop with bench, boot sink, and coat hangers with stairs leading to the drill yard in the rear.

The main entrance from Bulfinch Street gives access to a hall to the right of which is the watch room which commanding a view of the apparatus floor and fitted with alarm gongs, telephone, desk, push buttons, etc. Opposite the watch room and between two of the apparatus doors is an amplifier for announcing alarm locations. To the left of the hall or lobby are the rooms of the district chief which include office, bedroom, toilet, and closet.

On the second floor are seven rooms for officers with corridor leading to officers toilets and shower baths. In the rear are seven dormitories facing the drill yard. There is a large wash room with showers and toilets and a room containing 100 steel lockers for boots and clothing. There are smoking rooms for the men and for the officers.

Brass sliding poles lead directly from the dormitories and corridors to the apparatus floor below. The third floor contains a gymnasium, 54 feet by 35 feet, with a platform for lectures or entertainments. To the left of the gym is a dining room and kitchen. On the right of the gym is the officers' reading room with large fire place. In the rear section of this floor are a trophy room, library, class room, and billiard room. There is a porch overlooking the yard in which are a drill tower, ladder shed, and three hydrants.

HARRY BELKNAP.

CORRESPONDENCE

Fighting a Lumber Yard Fire

To the Editor:

I was very much interested in the account of the lumber yard fire that was printed in the October 31 issue, together with a description of how the fire should have been fought that appeared in the following issue.

In giving you my method of how the fire should have been handled, I do so not to criticise but possibly to present a new angle.

A chief officer should always remember to separate or cut off the portion burning from the section not actually burning, at the same time covering all exposures and wetting down to prevent the spread of fire.

Therefore, place Engine 1 at hydrant No. 4, stretching two lines between lumber piles 1 and 2, and the two buildings on the northwest. The first line is to cover the shaving bin and the west side of the lumber pile No. 1. The second line is stretched to the northwest corner of lumber pile No. 2. This line is to operate along the west side of the north half of the lumber pile No. 2 to cut off the fire and to keep the two-story frame building from igniting.

Place Engine 2 at hydrant 6. Stretch two lines between the loaded lumber cars and lumber pile 3 on the east. Lead the first line to a point well north and mount it on top of lumber car. This line is to operate on the east sides of lumber piles 2 and 3 clear to the north ends to keep the piles cool by constant wettings. This line could keep the fire from spreading to the stable and coal bins. Lead the second line to a point opposite rear of lumber pile 3 and mount the line on top of lumber car.

These two heavy streams operating from the top of loaded cars with 1½-inch tips could keep east ends of lumber piles 2 and 3 and tops cool. The loaded cars are prevented from catching fire and confining it to the place of origin.

Place Hose No. 4 at hydrant 3 and stretch two lines to the north of lumber pile No. 1. These lines are to operate between 1 and 2 piles to fight the fire from the south.

Members of Truck 1 and 2 are to assist in laying out lines and placing ladders against loaded cars and the buildings on the northwest sides, and in moving lumber.

It is hard work to fight a lumber fire. In cutting off the fire, lumber must be moved and turned over—material must be inspected thoroughly before covering up.

Streams should never be directed against the base of a lumber fire, with the wind, for the flames are fanned to greater intensity. Never lead from a hydrant in the face of, or just ahead of a fire. Flank fire from the sides, starting from a position beyond the flames, and wetting down unburned material. By working towards the base, the fire is cut off and prevented from spreading. Always back fight a lumber fire.

There is an apparent lack of protection on the south of the lumber piles but a study of conditions shows that the area is well covered by lines 1 and 4. No mention was made

(*Continued on page* 509)

ALL-DAY FIRE DESTROYS GREASE FACTORY NEAR PITTSBURGH, PA.

Pennsylvania Trains Sent Through Cut-Off to Avert Danger of Expolding Grease Cans—Calls for Help Sent to Nearby Towns

By WILLIAM E. PATTERSON

FIRE which broke out from some unknown cause in the grease plant of the W. C. Hardesty Company and Falk and Company at Rosslyn Station, eight miles west of Pittsburgh, Pa., swept through the plant which covers ten acres. The loss was estimated at over $500,000. Flames quickly spread beyond the control of the volunteer firemen and raged virtually unchecked for hours until every building in the large plant was leveled to the foundation and there was practically nothing else for the flames to feed upon.

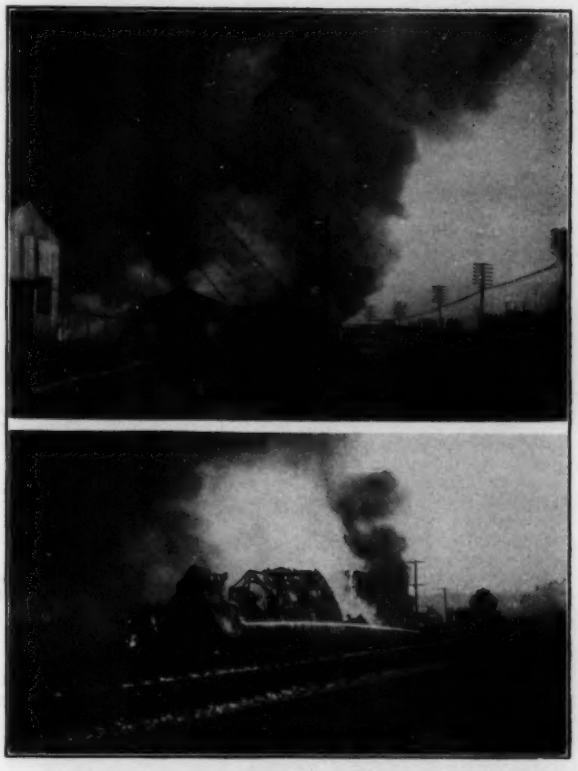
The fire broke out in the still house of the plant about 1:30 A. M. and the alarm was sounded by the night watchman, who, with three other employes, were the only ones in the plant at the time. The watchman and his companions attempted to extinguish the flames in the still house, but were driven back by a series of small explosions of grease and oil tanks which burst into flames and quickly spread to the group of twenty small buildings that comprised the plant.

Volunteer firemen from Carnegie, East Carnegie, Glendale and Heidelberg, responded with their apparatus but were driven back from the fire by the terrific heat generated by the burning greases and oils. Volunteer fire companies battled the stubborn flames that raged in the grease and oil tanks all day long on Sunday and late into the night but were unable to save any of the plant. After battling with the flames for almost three hours after the fire started, a call was sent to the Pittsburgh Fire Department for help and at 3:16 A. M., Engine Companies No. 10 and 39 from the western end of the city were sent by Deputy Chief Frank G. Jones. The firemen were in command of Battalion Chief William H. Kuhlman of the Fifth Battalion.

Upon their arrival at the fire, they learned that no hydrants were available for the city fire companies, and that there was no danger of the fire spreading beyond the plant. The city fire companies returned to their quarters upon orders from Deputy Chief Jones.

Later on in the morning Pittsburgh representatives of the American-LaFrance and Foamite Company were notified of the fire by Deputy Chief Frank G. Jones and they immediately had their service truck loaded with two tons of Foamite and a foam generator and started for the scene of the fire in charge of two of their men, experts in the handling of foamite.

Owing to the great distance between fire hydrants and the few in number around the plant, it was impossible to render the best of efficient service with the foam. A line of hose, 3,500 feet long was placed from the nearest available fire hydrant to the foam generator.



Dense Clouds of Black Smoke Attracted Thousands to This Grease Factory Fire

By hard and difficult work the foam operators succeeded in extinguishing the fire in three tanks of grease and oil.

Several carloads of material ready to be shipped from the plant were destroyed by the flames. With the exception of the boiler house, every building on the ten acre plant was razed to the foundation.

Huge volumes of heavy black smoke that rolled into the sky in great clouds all day long from the burning tanks of grease and oils, attracted sightseers from all over the southwestern end of Allegheny County.

Thousands of spectators lined the surrounding hillsides overlooking the plant to view the spectacular scene as the great sheets of flame and great clouds of heavy black smoke rolled hundreds of feet into the heavens.

The Grease Plant of the W. C. Hardesty Company, Covering Ten Acres in Rosslyn Station, Pa., Was Completely Destroyed

Officials of the freight transportation office of the Pennsylvania Railroad and of the United States Bureau of Explosives, who arrived on the scene shortly after the fire broke out ordered all passenger trains detoured by way of the Skelly cut-off, because of the explosion danger of tanks adjoining the right of way of the railroad. The division operator and division supervisor of the railroad stayed at the fire all day ready to close the right of way to all traffic if the blaze should break out anew.

Traffic was resumed on the main line of the railroad late Sunday afternoon. Telegraph poles along the tracks of the railroad were burned but communication was kept open.

This fire was just a short distance from the large oil refinery fire in which two Stowe Township firemen were killed in Heidelberg, Pa., last February.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending May 31

ONEONTA, N. Y.—Whse., Morris Bros. Feed Co..... 25
CLEVELAND, N. D.—Elevator of Farmers Co-Operative Co..... 40
DERRY, N. H.—Mattress factory damaged..... 30
BERLIN, CONN.—Property of G. C. Carter..... 25
ST. LOUIS, MO.—Woolworth Store and adj. property..... 250
PORT ARTHUR, TEX.—Plant, Gulf Refining Co. damaged..... 50
STAMFORD, CONN.—Franklin School destroyed..... 40
BERWICK, PA.—Home of C. G. Crispin destroyed..... 35
PORT ALLEGANY, N. Y.—Merrill Grist Mill destroyed..... 25
N. DIGTON, MASS.—Plant of North Digton Stone Co..... 80
PROVIDENCE, R. I.—Cutting plant of Phillips & Mason Co..... 200
MINERSVILLE, PA.—Factory of H. D. Bob & Co..... 475
CAPAC, MICH.—Duro Wood Co. plant..... 125

California Has Another Large Oil Fire

For the third time within the past four months, a serious fire was raging within the boundaries of the Santa Fe oil district, a short distance from Los Angeles. The blaze started on the grounds of the General Petroleum Co. Fire-fighters within the vicinity of the well were driven back by a pillar of flame about 175 feet high. The heat melted steel derricks. One of the derricks is here shown toppling over as a result of the fierce heat.

OMAHA, NEBR.—Union Pacific Commissary bldg..... 25
HAZLETON, PA.—Caruso restaurant, adj. property..... 30
JEFFERSON, S. C.—State Warehouse..... 25
TALLAHASSEE, FLA.—Bldg. at Florida A. & M. College..... 35
AUBURNDALE, FLA.—Paul Smith Hotel damaged..... 35
ASHDOWN, ARK.—School bldg. destroyed..... 60
ROANOKE, VA.—Three bldgs. "Wholesale row"..... 400
PALMER, ME.—Mill of Saunders Bros..... 25
VALDOSTA, GA.—Plant of Jackson Lumber Co..... 150
BINGHAMTON, N. Y.—Business property of W. S. Kilmer..... 135
ALTOONA, PA.—Karides Restaurant, adj. property..... 40
MUSCATINE, IA.—Three bldgs. of Iowa Sheet Metal Co..... 25
CRAIGMONT, IDAHO—Howard grain whse. destroyed..... 30
VERWOOD, SASK.—Business property on Main Street..... 25

Week Ending June 7

MALDEN, MASS.—Malden Club bldg. damaged..... 25
ST. JOHNS, WASH.—Bldg. of Portland Spruce Co..... 35
MARQUETTE, WISC.—Business property damaged..... 25
GRASS LAKE, MICH.—Rohrer market and Foster store..... 25
TAWAS CITY, MICH.—Lake Huron Fish Co., wharf, 2 mi. N.E.... 45
TACONY, PA.—Plant of Gillinder & Sons destroyed..... 200
BLOOMINGTON, ILL.—Property of Hayes-Custer Co..... 80
PHILADELPHIA, PA.—Bergner & Engel brewery property..... 165
SAPPERTON, B. C.—Planing mill of Brunette Lumber Co..... 80
HAMBURG, ARK.—Business property owned by L. J. Settett..... 25
WINNIPEG, ONT.—Pavilion at City Park destroyed..... 80
MALVERN, PA.—General Warren Inn damaged..... 65
BROOKFIELD, MASS.—Brookfield ice house..... 80
GARDEN CITY, N. Y.—Plant of Garden City Wood Works..... 160
ELIZABETHTON, TENN.—Dry cleaning plant of H. M. Slagle.... 35
HADDON HEIGHTS, N. J.—First Baptist Church destroyed..... 80
SALISBURY, MD.—Feldman Bros. warehouse..... 35
PHILADELPHIA, PA.—Factory of T. J. McKenna & Son..... 65
CHICAGO, ILL.—Chicago General Hospital..... 25
ROCHESTER, N. Y.—Hanger, Municipal airport..... 40
BRIDGEPORT, CONN.—Columbia Nut & Bolt Co., adj. property.... 45
PHILADELPHIA, PA.—Factory of Gillinder & Sons..... 200
JOHNSON CITY, ILL.—Clancy Hotel, adj. property..... 40
HOBOKEN, N. J.—Property of Jagels & Bellis Coal Co..... 45
LA CROSSE, WISC.—Roadhouse owned by J. Serres..... 25
HURON, S. D.—Elevator of S. F. Reese destroyed..... 25
E. BRAINTREE, MASS.—Fore River plant of Cities Service Refining Co. 400
HURON, OHIO—Woolson Mansion owned by M. Green..... 35

Why Not a Fire Department Zoo?

Six months ago the children of Clovis, N. M., were forced to go to the mountains, the circus or to other cities in order to get a glimpse of many wild animals. Today, Clovis boasts the finest and largest zoo in a city of its size in the United States.

R. V. Miller, who is city manager and fire chief, is responsible for the Clovis zoo. He conceived the idea that it would be mighty fine for the children of Clovis to have some place to go where they could study wild animals and birds, and where they could obtain real amusement. Mr. Miller's dream has come true. Clovis now has a modern zoo and the greatest wonder of all is that it has cost the city less than $250 to date. However, in the future, the city will be forced to bear the expense of a keeper for the zoo has grown until one is necessary.

In less than six months, through donations from business firms and individuals, the zoo has a pen of ravens, porcupines, prairie dogs, guinea pigs, coyotes, alligators, peafowls, monkeys, golden eagles, squirrels, blue quail, wild ducks and geese, wildcats, Nubian goats, Black African sheep, rabbits, and many other small animals.

The city and county of Denver, Colo., recently presented the zoo with two large black bear and arrangements have been made to add deer, elk and mountain lions to the collection.

On an ordinary week day, recently, a census was kept and in seven hours more than 600 people—mostly children—went through the zoo.

All the animals are becoming tame and it is nothing unusual for children to spend two or three hours in front of a cage or pen.

Through donations from lumber yards and building material firms and union labor organizations, the city has a fine set of pens and cages for the animals.

"Any other city can do what we have done," said Mr. Miller. "You would be surprised to learn of the many people who have offered to make donations to the zoo. In fact, it is growing so fast that we are now hard-put to take care of all of the animals offered."

Chief Ray D. Wells Congratulated—Chief Ray D. Wells of Falmouth, Mass., has been congratulated for his efficient work in stopping a forest fire that threatened N. Falmouth.

Everett, Mass., May Buy Aerial Ladder—Chief Philip Ham of Everett, Mass., has recommended the purchase of an 85-foot aerial ladder and two pumpers.

New Haven---Its Fire Department

(*Continued from page* 492)

were drawn up for the government of a paid force and on June 24, 1862, Charles W. Allen was named as the first chief engineer of the paid department which then supplanted the volunteers. In July of 1879 the Veteran Volunteer Firemen's Association of New Haven was organized.

One of the best known New Haven chiefs was A. C. Hendrick, who was a veteran of the volunteer days. He joined the Franklin Hose Company in July of 1850 when he was only 17 years of age. He later joined the Franklin Engine Company and was serving as foreman of Hook and Ladder Company No. 1 at the time of the outbreak of the Civil War. He went to war with the New Haven Grays, who were then known as Company C, Second Connecticut Volunteers. He was later commissioned as lieutenant in the 12th Regiment of Connecticut Volunteers. Upon returning to New Haven at the end of the war he joined Hook and Ladder Company No. 1 as a private; but not long afterwards he was elected chief engineer. He proved an efficient and popular commanding officer and made a great many improvements in the service and equipment.

New Haven sent an engine to assist at the great Boston Fire of Nov. 9, 1872.

Nineteenth Century Student Riots

This history would not be complete without mention of the various "student riots" including the notorious "Town and Gown Riot" of 1842 in which a fireman was killed. In later years certain Yale classes had a so-called tradition that in entering college they must "burn their bridges behind them." Accordingly the hilarious students used to set fire to the bridges over a branch railroad line near the college. These blazes were usually extinguished by the firemen before any serious damage resulted.

The Department Under Chief Fancher

Under Chief Rufus R. Fancher, the veteran fire fighter who was so beloved that only a few years ago he was retired on full pay, the first pieces of motor equipment were introduced into the department. The famous Chemical Company No. 1, known as "the flying squadron," which rolled from the Olive Street house to every alarm in the city, was established and rendered efficient service for many years. Gradually horses were replaced by motor pumpers until the service was completely motorized.

Chief Fancher instituted a drill school and building inspections and supervised the installation of the new Gamewell fire alarm system in the new headquarters building. It was under his regime that many large fires were fought which have gone down into history, yet nearly all of these were confined to the building in which they originated. Some of them were fought in bitterly cold weather when the men were encased in ice and the ruins were glistening places of frozen splendor when the battle had ceased.

It was under Chief Fancher that the two platoon system was introduced and the handsome new fire houses built for Engine Company No. 7 and Engine Company No. 4. He was ably assisted for many years by Fire Marshall William B. Perkins, Assistant Chief Patrick F. Redmond and Assistant Chief Isaac Isaacs. Chief Redmond is still on duty, but the other two have retired.

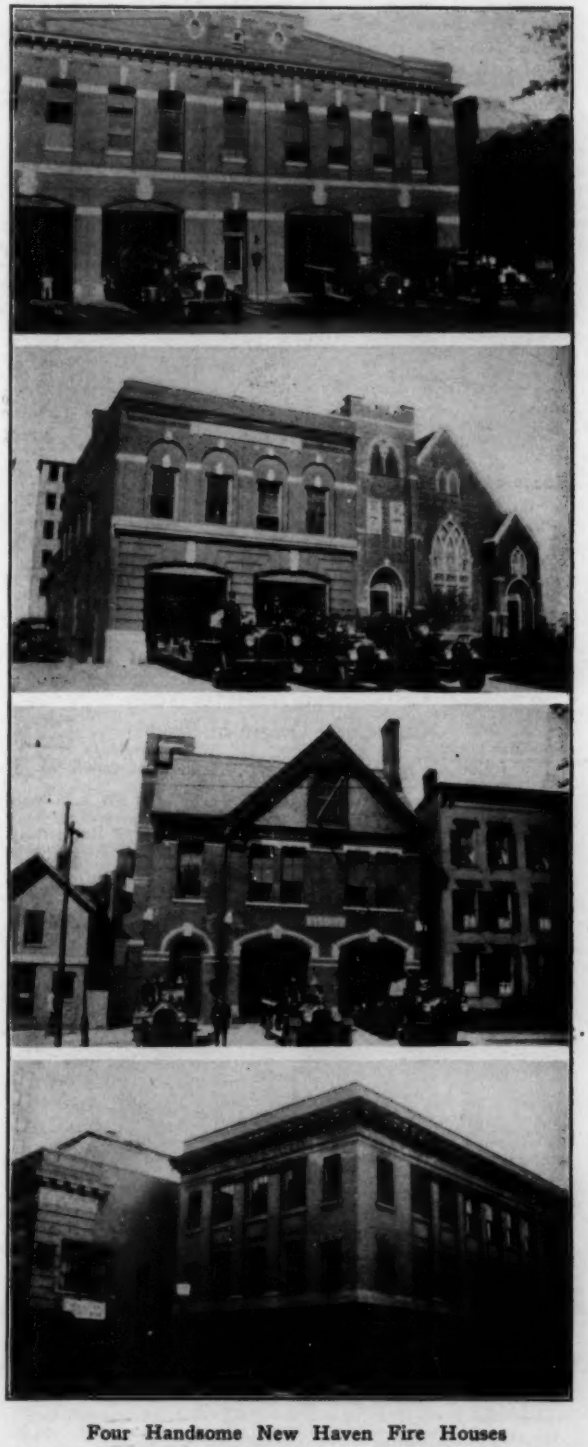
A Tragic Fire

Perhaps the most tragic occurrence in the whole history of New Haven was the jail fire in which six New Haven firemen perished in the flames when they became trapped by a door which slammed shut and locked them in a section of the prison while they were fighting the fire. Some of the men were rescued when the roof blew off, by ladders quickly thrown up and dropped inside, but the others could not be reached. Two of the men rescued were terribly burned. Those who lost their lives were Capt. Charles Chapman, Lieut. William Doherty, James Cullen, James Mortell, John Buckley, and Thomas McGrath. Those rescued were Capt. Charles O'Neill, Albert Wilcox, John Hussey, and Thomas Vaugh. The date of the jail fire was April 13, 1910.

Two Platoons Adopted

The two platoon system went into effect on June 1, 1919. At this time there were appointed two additional assistant chiefs, the four assistants being Patrick F. Redmond, Isaac Isaacs, Frank O. Spaine, and Frederick Hott, also fire marshal and chief of department.

Chief Fancher retired in 1925 after 40 years of active fire duty. He was succeeded by Chief Lawrence E. Reif who had formerly been a captain in the department, having left



Four Handsome New Haven Fire Houses

From top to bottom—1—Engine Co. No. 2, and Ladder Co. No. 1, Olive Street. 2—Engine Co. No. 6, and Ladder Co. No. 4, Whalley Avenue. 3—Engine Co. No. 1, and Ladder Co. No. 2, Howard Avenue. 4—Fire Headquarters

the service temporarily to take charge of fire protection in the factory of the Winchester Repeating Arms Company.

The Fire Department in 1926 and 1927

In 1926 the Department of Fire Service consisted of 307 officers and men with 218 substitute firemen. The officers were chief, fire marshal, 7 assistant chiefs, 2 deputy fire marshals, superintendent of fire alarms, supervisor of motor apparatus, 21 first grade captains, 11 captains, second grade; and 13 lieutenants.

The following data is taken from the annual report of Chief Lawrence E. Reif for the year ending Dec. 31, 1927:

Apparatus in Active Service—14 Motor Pumps and Hose Cars; 5 Triple Combination Pump, Chemical & Hose Cars; 8 Combination Chemical & Hose Cars; 4 75-foot Seagrave Motor Aerial Trucks; 1 65-foot LaFrance Aerial Truck & Chemical; 2 City Service Trucks.

House of Engine Co. No. 14, Highland Street, New Haven

Other Rolling Stock—2 Cadillac Cars (touring); 2 Chevrolet Roadsters; 2 Chevrolet Roadsters with business body; 1 Ford Roadster with business body. 1 Reo Speed Wagon; 1 Ford Ton Truck; 1 Pierce-Arrow Roadster with business body; 1 Marmon Touring car; 1 Buick Touring Car; 1 Flint Sedan; 1 Chrysler Sedan.

Hose—Nine thousand Feet of Underwriters' 2½ inch labeled, double jacket fire hose has been purchased. All hose has been tested to 200 lbs. pressure and all companies have two changes.

Cause and Origin of Fires

The following is from the report of Fire Marshall M. J. Fleming:

Investigation of Fires—The cause and origin of 1,365 fires were carefully investigated and the result reported in accordance with the provisions of the general statutes of the State of Connecticut.

A Fair Haven Section Station in New Haven, That of Engine Co. No. 17

The evidence in seven cases was sufficient to warrant the fires being classed as of incendiary origin and the cause of five fires was of suspicious origin and the probable cause of nine fires was not determined.

Deaths from Fires—Fire caused the death of seven persons during the year, of this number three were children and four were adults.

False Alarms of Fire—Seventy-seven false alarms were received during the year and were attributed to malicious mischief. For further information relating to fires and alarms I would respectfully refer you to the Annual Report of the Chief of the Department of Fire Service.

Personnel of Present Department

The present chief officers of the Department of Fire Service, New Haven, Conn., are as follows:

Board of Fire Commissioners—John T. Sloan, president; Manuel Rice; Edward L. Richards; Edward O'Neill and Herman Bussman.
Chief of Department—Lawrence E. Reif.
First Assistant Chief—Frank O. Spaine.
Assistant Chief—Patrick F. Redmond (In charge of Fire Prevention Bureau).
Assistant Chiefs—R. M. Green; Joseph Kelly; Charles Jackson; Frank Miller; William Killoy and Jeremiah Dunn.
Assistant Chief—Frank O. Blatchley (Supervisor of Motor Apparatus).
Fire Marshal—M. J. Fleming.
Deputy Fire Marshals—Capt. Irving Hamilton and Terrence Reynolds.
Acting Superintendent of Fire Alarm—John Roche.

Former Chiefs of Fire Department

The list of former New Haven fire chiefs as far as available with the years in which they served is given below:

Volunteer Department Chief Engineers

Samuel Ward	1821	Leverett Shepard	1846-1847
R. M. Clark	1834	Charles Thompson	1847-1848
Caleb Mix	1840-1841	James T. Hemingway	1848-1852
Eli B. Austin	1841-1842		
Philip S. Galpin	1842-1843	(Died in Service)	
Everett Griswold	1843-1844	Charles A. Nettleton	1852-1853
Levi Gilbert	1844-1845	Charles W. Allen	1853-1854
Alfred Daggett	1845-1846	Hiram Camp	1854-1862

Paid Department Chief Engineers

Charles W. Allen	1862-1865	William H. Hubbard	1897-1898
A. C. Hendrick	1865-1893	Rufus R. Fancher	1898-1925
Andrew J. Kennedy	1893-1897		

Espey Completes 25 Years as Chief

John H. Espey, chief of the fire department in Elmira, N. Y., completed twenty-five years service on May 16, 1929, as chief. On June 27 of this year he will round out forty-two years service in the Elmira Fire Department.

Chief Espey entered the department June 27, 1887. He was appointed foreman on May 6, 1889. With his duties as fireman, he was the department plumber, and since he was a good penman and excellent accountant, he became secretary to the chief of the department. His son, Lieut. Arthur Espey, is at present the department's secretary.

On May 16, 1904, Foreman Espey was appointed chief engineer of the department. He has filled this post conscientiously and most efficiently. He has been instrumental in building up the organization to its present status. An account in a local newspaper states:

"The chief is of splendid physique, active and alert. His department compares most favorably with many of the larger and well equipped fire-fighting forces of the country."

In recognition of Chief Espey's ability and admirable record, the city of Elmira, through the Mayor and Fire Commissioners, presented him with a suitably inscribed gold badge.

Public Told of Causes of Fires

Perhaps the latest in education plans used to lower a municipal fire loss, explaining the cause of fires, has been practiced by Detroit, Fort Wayne, Ind., and Milwaukee, and perhaps other places that have not come to the attention of this office.

The Detroit Chamber of Commerce has a weekly publication. Fire Marshal Gabriel Goldwater of the Fire Prevention Bureau writes a page on fire causes, month by month. The causes are reviewed and discussed each month at the meetings of the fire prevention committee of the Board of Commerce. Conditions causing the most frequent fires receive first attention.

The *News-Sentinel*, a daily evening paper in Fort Wayne, Ind., has a write-up each week on the fire causes. This material is written by Carl S. Steup, director of the Fire Prevention Bureau. Persons may thus compare the causes of fire from week to week. The fire loss in this city is only eighty-one cents per capita.

Milwaukee has inaugurated a plan of broadcasting a review of the fires of the week in a fifteen minute speech over the radio every Friday night by Chief Steinkellner or some officer of the Fire Prevention Bureau. Causes of specific fires and the ease by which they might have been prevented are presented in a conversational style, and evidence is already received that the people throughout Wisconsin and adjacent states listen in to the program.

Telephone Men Give First Aid Work

Conversation on first aid between Chief Walter Steinmetz of Alameda, Cal., and E. J. Angwin, commercial manager for the Pacific Telephone and Telegraph Company at Alameda, led to a course of first-aid instruction for the crews of Captain Kennedy and Captain Monterio of Engine Company No. 1, whose combined personnel numbers sixteen men.

Classes were held on an average of two evenings each week, assisted by an instructor from the Pacific Telephone and Telegraph Company employees in Oakland. The course was completed in two months.

The Bell System methods were a revelation of simplicity to all who participated, and a keen interest was displayed by

Alameda Firemen Being Instructed in the Bell Telephone Method of First Aid Work

both crews. To know what to do, and how to do that one thing correctly, was the problem confronting these fire fighters before being instructed in the Bell System's method of first aid. Standard Bell System equipment was used throughout the course.

Some previous knowledge had been acquired along the line of emergency treatment for burns, bruises, and treatment for artificial respiration, as this is a part of the regular training of all the fire department forces. Artificial respiration as taught by the Bell System course brought forth much favorable comment as being superior to the methods used by the fire department. Captain Kennedy stated that in all future cases where it was necessary for his men to apply artificial respiration, the system as used by the telephone company would be practiced.

E. E. Harding, division safety supervisor of the telephone company was present on the start of the first class and gave a short talk on the advantages to be gained by having a working knowledge of first-aid training. His remarks were well received.

CHARLES W. GEIGER.

Lumber Yard Fire—(Correspondence)

(*Continued from page* 504)

of chemical companies. Such units are indispensable to keep fires from spreading and to care for flying sparks.

I see no need for a second alarm for all of the exposures are covered. I note that upon the arrival of the chief, he reassigned the lines and got two heavy street streams in operation to wet down the lumber piles to prevent further extension of the blaze. Had the officer who first arrived placed the two heavy streams on top of the loaded cars and operated from there to wet down the lumber pile, the fire could have been confined to its place of origin.

I have had twenty-five years' experience in fighting fires, including many lumber fires.

Yours very truly,
L. C. MOORE,
Captain Truck Co. 3, Sacramento, Calif. (Former Chief 1920-1921)

Three Apparatus Orders Placed With Woodhouse—The Woodhouse Manufacturing Company has closed contracts for fire apparatus for Central Islip, and Amagansett, N. Y., and Port Morris, N. J.

HOW CARBON DIOXIDE IS USED TO SMOTHER AND COOL FIRES

Principle Is Not a New One—Gas Is Stored in Its Liquid State, Issues in Form of Snow and Vaporizes Rapidly Into Gas

By DAVID LEERBURGER

THE use of carbon dioxide for fire extinguishing is not new. The general principles of its application have been known for some years but it is only recently that this method of fire protection for industrial hazards has been generally recognized.

Carbon dioxide, otherwise known as carbonic acid gas (chemical formula CO_2) is a product of combustion or oxidation of any carbonaceous matter, and is normally present in a small percentage in the atmosphere. Commercially it is principally obtained from the combustion of coke under controlled conditions. For convenience in storage and shipping the gas, it is compressed to a pressure of from seven hundred to one thousand pounds per square inch. This pressure varies according to the temperature. The gas is handled in steel cylinders specified by the Interstate Commerce Commission, and are designed so that safety discs will rupture at a pressure of 2,400 pounds.

When compressed in the cylinders, the gas is largely liquified, and this point is important.

A popular mistaking of carbon monoxide for carbon dioxide has retarded the development of the later gas for fire-fighting. Carbon monoxide is the much advertised poisonous constituent of automobile exhaust gases and is rightfully feared. It has no relation to carbon dioxide which is harmless.

There is no life hazard in the use of such extinguishers. However, where the gas is applied to flood an entire room or area, the space should be evacuated before the carbon dioxide is introduced, and for such flooding systems, some form of alarm apparatus may be used.

The gas is inert and is incapable of supporting combustion. It is fifty per cent heavier than air and it will penetrate into the smallest crevice. It is a non conductor of electricity, and the gas may be applied to high voltage without removing the potential. Carbon dioxide may be sprayed over food stuffs without any harmful effects. It is used in the bottling industry to make carbonated beverages at soda fountains.

It differs from other extinguishing mediums for it deposits a layer of dry carbonic snow and ice over the fire, and the gas immediately displaces the oxygen so that the blaze can not survive.

The CO_2 extinguisher has a siphon tube to take the liquid CO_2 from the bottom of the cylinder instead of the gas from the top. When the gas is released from the cylinder, it expands through a cone at the end of a hose line so that the gas occupies a space five hundred times what it did in the cylinder. This rapid expansion produces extreme cold (110° below zero). This temperature brings the substance burning below its ignition point and the gas snuffs out the flames.

There is no deterioration in carbonic gas. It will not evaporate, neither will it freeze of itself in the coldest climate.

Atlanta, Ga., Against Exchange of Sites—The Council of Atlanta, Ga., is against the plan to exchange the site of Station No. 8 for a new location.

Fire Companies to Parade at Exposition—Sixty fire companies will parade at the Cambria County Industrial exposition to be held at Ebensburg, Pa., July 1 and 2.

Some of the Who's Who in Goosedom

An organization known as the Blue Gooses was formed at the time of the fire school in Utica, N. Y. Some of the prominent Blue Gooses have been sketched by "Art" Espey, official cartoonist for the order.

NEW STANDPIPE RULES ADOPTED FOR THE CITY OF NEW YORK

Board of Standards and Appeals Formulates New Regulations—To Be Published in Their Entirety in These Columns

HEREWITH is continued from the May 29 issue the new "Standpipe-Fire Line Rules" of New York City. The original rules were adopted by the Board of Standards and Appeals of that city on June 22, 1922, were amended July 20, 1923, and again on May 18, 1928. The finally adopted form as reproduced herewith, was adopted July 20, 1928. Through the courtesy of Chairman William E. Walsh, of the Board, FIRE ENGINEERING *is enabled to publish the entire new rules serially.*

These new rules or formulated largely through the efforts of Peter J. Maher, Fire Preventive Inspector attached to the Division of Fire Appliances of the New York Fire Department.

RULE 87. STREET MAIN CONNECTIONS.—Subject to the requirements of the Department of Water Supply, Gas and Electricity, the size of each standpipe connection to a street main shall be not less than 4 in. in diameter and shall have a conveniently accessible control valve in the line at or near the curb or when practicable in a more remote location. The control valve shall be fitted with a frost and waterproof box not less than 4 ft. nor more than 6 ft. below the curb with a fixed stem extending to a compartment at the level of the sidewalk. The cover shall be bolted to the casing, and shall be so marked as to be quickly located and to indicate the purpose of the valve. The valve shall be of an indicating pattern, operating by a special socket wrench approved by the Department of Water Supply, Gas and Electricity. The water meters used in standpipe fire line supplies shall be of approved type allowing free flow of water. Supply through the meter shall be checked against the Fire Department Siamese Supply and against tank supply.

Where, due to the presence of a vault under the sidewalk and extending to within 18 in. of the curb, it is impracticable to install a control valve box at the curb, there shall be placed in the feed line from the main a control valve located not more than two feet from the point of entry.

RULE 88. HIGH AND LOW WATER ELECTRIC ALARMS.—The high and low water electric alarm for gravity tanks shall be so constructed and arranged that a decrease in the quantity of water below the required fire line reserve shall cause an alarm to be given in either the pump room or engineer's room. An annunciator shall be provided in connection with the alarm system. The high and low tell tale electric devices for gravity tanks shall be so constructed that they will not be affected by moisture and the parts shall be heavy and rugged. The level of the water in the gravity tank shall be indicated by an approved device.

The audible signalling device for high and low water electric alarm shall consist of vibrating gong of at least 6 inches diameter of the enclosed type and arranged for conduit installation, the same to be operated automatically. The control cabinet shall be arranged for conduit installation and shall be located in the engineer's room or pump room where it will be under supervision of the person in charge of the standpipe supply.

All wiring shall be installed in rigid conduits and the installation shall be in accordance with the provisions of Chapter 9 of the Code of Ordinances. Control panels must be approved by the Board of Standards and Appeals.

The following sources of energy may be employed and are given in their order of preference:

1. Public utility electric light and power systems.
2. Independent electric generating plants.
3. Storage batteries in duplicate.
4. Primary batteries of closed circuit type.

When the system is connected to a 110 volt lighting service a suitable cut-out is to be provided and it shall be enclosed in a locked or sealed metal cabinet. The connection to system shall be the first connection on the house side of and as near as practicable to the meter. When batteries are used to operate the system they shall be placed in an approved cabinet provided with a lock and key.

RULE 89. DRY PIPE VALVE.—A dry pipe valve shall be taken to mean a valve automatically controlling the water supply of the standpipe system in such a manner that under normal conditions its piping system will be maintained dry, but in the event of a hose valve being opened, the dry pipe valve automatically releases the water into the standpipe system.

In refrigerating plants or in unheated buildings, piers or warehouses where wet lines are impracticable, dry pipe valves may be installed.

Type A, in which the valve is actuated by the release of compressed air in the standpipe system due to the opening of a hose valve; and Type B, in which the valve is actuated by an approved trip under electrical control of an approved non-coded or coded closed circuit system operated from the control station at each hose outlet. Dry pipe valve shall be located as near as practicable to the standpipe system, in an enclosed place, protected from mechanical injury and freezing.

When Type A valve is installed the air pressure in the standpipe system under such dry pipe valve control shall not exceed 40 lbs. per sq. in. nor be permitted to fall below 25 lbs. per sq. in. nor shall it be less than one-sixth of the water pressure in any case. Not more than 16 hose outlets shall be supplied through one dry pipe valve. The air compressor shall have a capacity of not less than 11 cu. ft. per minute, and the air supply for the pump shall be taken, if possible, from a room containing dry air, or it shall pass through a drying chamber containing calcium chloride in order to avoid the introduction of moisture into the system.

A closed circuit alarm shall be provided in connection with each dry pipe valve installation; the electrical layout shall be approved by the Fire Commissioner.

(*To be continued*)

Coupes Purchased for Detroit Battalion Chiefs

Fourteen Graham-Paige coupes have been purchased for the use of battalion chiefs of the Detroit Fire Department. A control lever on the inside of the car controls a trap door to a compartment in which are stored rubber coats, boots and helmets for the chief and his driver. The automobiles are equipped with four-wheel brakes.

Ex-Chief of Princeton Dead

John J. Stryker, former fire chief of Princeton, N. J., died at the Princeton Hospital in his eighty-sixth year. He was born in Princeton. The late chief is survived by his widow, and two married sisters.

Johnson Heads Knoxville Department

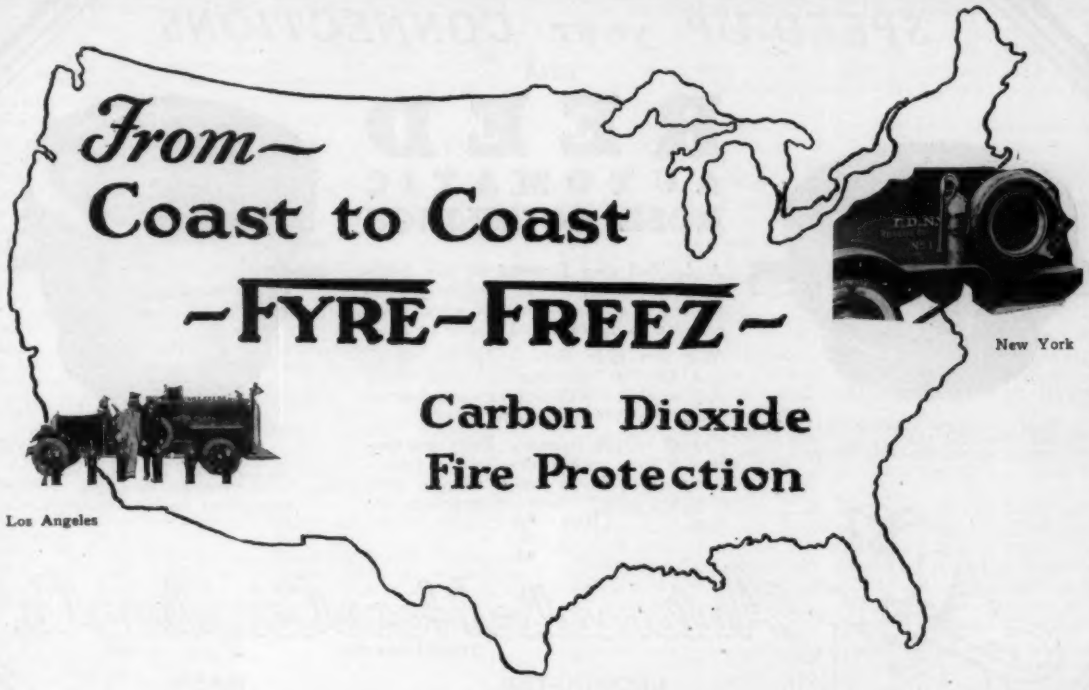
Calvin M. Johnson, assistant chief of Knoxville, Tenn., has been promoted to the head of the department following the retirement of Chief Ben F. Suddarth on June 15.

Chief Johnson is a veteran member of the department and is held in high esteem by his associates. He has been connected with the local department for twenty-five years. He was connected with the No. 5 station and served that station as captain for several years. He was transferred to the Commerce Avenue station about ten years ago, and soon after this change was made assistant chief.

Chief Suddarth who is to retire, was appointed head of the department following the death of Chief Sam Boyd. Shortly after his appointment, Mr. Suddarth who is now seventy-three years old, decided to enter his application to be retired on a pension.

Davidsville, Pa., Considers Farms—A meeting was held in Davidsville, Pa., to consider the matter of rural fire protection in Conemaugh township.

Fire House Opened in Barnard, N. Y.—A thirty-piece band played at the opening of the new fire house in Barnard, N. Y. The department has two modern pieces of apparatus.



Model 20
Fire Department
Extinguisher

Modern Equipment for Fire Departments

In these days of automobiles, garages, oil burners, inflammable industrial materials and other such fire hazards, fire departments without carbon dioxide equipment are as far behind the times as horse drawn apparatus.

FYRE-FREEZ, a product of the world's largest manufacturer of CO_2 gas, will almost instantly extinguish fires which water or other ordinary chemicals would only tend to spread. Fire departments find FYRE-FREEZ very valuable in extinguishing fires in walls or partitions, where the CO_2 gas penetrates every crack and corner without requiring heavy damage to property to reach the fire.

In electrical equipment, too, FYRE-FREEZ extinguishes without requiring the power to be shut off—and with absolutely no damage to anything but the fire. FYRE-FREEZ

"Destroys Nothing But Fire"

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Dallas, Texas
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Kansas City, Mo.
Louisville, Ky.
Memphis, Tenn.
Minneapolis, Minn.
Nashville, Tenn.
New Orleans, La. (2)
New York, N. Y. (3)
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REED AUTOMATIC HOSE COUPLINGS

Style A—Nozzle Coupling, 2½-inch (Patented 1925). Good for use on Nozzle, Gate and Pump.

A decided step forward in fire fighting equipment. They enable you to make the quickest possible connection of hose to hydrant and nozzle to hose.

You can save time, property, water and life by "speeding-up" with Reed Automatics. Will not cross-thread or jam. Broken threads no trouble.

Tested to 500 pounds. Fully guaranteed. Just pushes on—half a turn—your connection's made. Holds with "bulldog grip." Sent on approval for trial.

Style C—(Swivel) Hydrant Coupling, 2½-inch (Patented 1925)
Recommended for end-of-hose for Hydrant Connection
Combination Spanner furnished

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Buffalo Type 50—500 Gallon Pumper

Buffalo Pumpers are the most highly developed in design, construction and engineering standards and are intended for municipality, community and township fire protection.

Buffalo Pumpers are also noted for their efficiency and their great abundance of reserve power. They are pumpers with stamina and speed. All the above have to be credited for bringing great pumping merits for Buffalo Pumpers.

Buffalo Pumpers are given great and careful attention when under construction at our factory by engineers, both mechanical and designing, who have been in contact with the construction of pumpers for years.

Buffalo Pumpers range from 300 gallon capacity to 1000 gallon capacity.

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44 CENTRAL AVENUE **BUFFALO, N. Y.**

Manufacturers of all types of Fire Apparatus

Pacific Coast Chiefs to Meet in July

The thirty-six annual convention of the Pacific Coast Association of Fire Chiefs will be held at Vancouver, B. C., on July 23 to 26, the headquarters hotel being the "Vancouver." The local arrangements are in charge of Chief Charles Thompson, of the Vancouver Fire Department. The tentative program is as follows:

Monday, July 22.

8:00 p.m. Get-together Party, Vancouver Hotel Ballroom.
7:00 p.m. Officers' Dinner.
ing Ladies' Auxiliary.

Tuesday, July 23.

10:00 a.m. Opening Session. Music by Pasadena Fire Department Band, Seattle Fire Department Orchestra and Quartette.
Meeting called to order by President, Thomas R. Graham. Introduction of Distinguished Guests.
Address by Chief John M. Evans, of New Orleans, President International Association of Fire Chiefs.
Pacific Coast President's Address.
Music by Portland Fire Department Orchestra and Quartette.
11:00 a.m. Memorial Services. Address by speaker representing Ladies' Auxiliary.
2:30 p.m. Ladies' Auxiliary, Vancouver. Business Session—Oils.
6:00 p.m. Dinner—British Columbia, Oregon, Washington, Idaho and Montana Chiefs.
7:30 p.m. Round Table—Discussion.

Wednesday, July 24—(Hotel—Small Auditorium).

7:30 a.m. Drills.
9:30 a.m. Business Session (a) Paper by Percy Long; (b) Paper on Salvage.
2:30 p.m. Business Session—(a) Paper on Rural Protection. (b) Paper on Approval vs. Non-Approved Appliances. (c) Manufacture and Use of Nitro Celulose Lacquers, by Frank P. Kelley, Fire Marshal, San Francisco.
6:00 p.m. Dinner—California, Arizona, Nevada and Utah Chiefs.
7:30 p.m. First Aid Contest.

Thursday, July 25.

7:30 a.m. Drills.
9:30 a.m. Business Session—(a) Use of Dynamite During Conflagrations. (b) CO_2 Gas.
12:00 Noon. Luncheon—Ex-Chiefs.
2:30 p.m. Business Session—(a) Booster Pumps. (b) Use of Water at Fires. (c) Fire Fighting in Extreme Cold Weather.
3:30 p.m. Fire Alarm, Telephone and Electrician Meeting. C. C. Mulligan, Cancouver, B. C., Chairman.
3:30 p.m. Master Mechanics' Meeting. Ed Henry, Los Angeles, Chairman.
3:30 p.m. Commissioners' Meeting. Commissioner C. A. Bigelow, Portland, Chairman.
6:30 p.m. Banquet and Ball.

Friday, July 26.

9:30 a.m. Closing Session—Report of Committees, Election of Officers, selection of next convention city. Adjournment.
First Aid and Drill Committees: Chiefs Ed. Grenfell, Geo. M. Mantor and S. S. Sanderson.
Program Committee: Chiefs E. F. Coop, Jay W. Stevens and Captain Wm. Groce.
Exhibits Committee: Chief J. H. Watson, District Chiefs Raymer and Clarke.
Ladies' Committee has planned theatre parties, shopping trip through historic Hudson Bay Store, etc.

Carbon Dioxide Used on Gas Fire

Compressed carbon dioxide gas was successfully used in Taunton, Mass., to extinguish a fire in a 100,000 cubic feet capacity gas tank containing 25,000 cubic feet of gas. Fire officers feared that an explosion would blow off the roof of the tank and add new hazards.

A falling cupola punctured the center of the tank and permitted gas to escape and relieve the internal pressure.

Close to a half-dozen lines were laid from fire hydrants. Employees of the gas company were on hand to regulate the feeding of gas, to keep the opening made in the tank by the cupola, blocked by burning gas.

Chief Leonard had the opportunity to use for the first time, a new carbon dioxide extinguisher when the efforts of the gas company employees to put out the fire were unsuccessful. The carbon dioxide solved the problem. When the fire was extinguished, the hole in the tank was quickly plugged with a slab of metal and some cement to save whatever gas still remained.

Work Started on Collingsdale, Pa., House—Ground was broken for a $30,000 fire house in Collingsdale, Pa., as a large crowd was on hand to watch the ceremonies.

Test Completed of New York Apparatus

The National Board of Fire Underwriters has concluded the test of fire apparatus as part of its survey of the New York Fire Department. Engineers of the Underwriters selected one engine company in each battalion as a nucleus. The oldest company was picked. New York City has over fifty battalions.

The tests were conducted by George L. Swan and Wm. H. Young at a dock at the foot of West 55th St., New York, near the fire department repair shops. Each engine designated for testing was manned by an officer and four men consisting of two chauffeurs and the two pump operators in case the chauffeur was not a combination of both.

The apparatus was tested to deliver its capacity at one hundred pounds pressure for twenty minutes, and a two hundred pound test for ten minutes. Suction was taken from the river.

During these tests readings were taken of the vacuum and engine pressure gauges, the revolutions per minute of the pump, and the pressure at the nozzle as recorded on the pitot gauge. These readings were taken every five minutes. Some of the engines tested were in service for twelve years, and none was under five.

The tests were observed by Deputy Chief Arthur Miller of Malden, Mass.; Capt. Edward McGinley and Capt. Henry Menzel, of East Orange, N. J., students at the New York Fire College.

Deputy Chief Richard Marshall in charge of the Repair Shops, Capt. Herman Kuch, a supervising engineer, and a crew of department mechanics, assisted in this work.

Tests of ladder companies, special units and fireboats were observed at the regular weekly drills on Sunday mornings

While Mr. Swan and Mr. Young were engaged at this work, J. H. Howland and George J. Robinson, other engineers of the National Board of Fire Underwriters, surveyed the work of the Bureau of Fire Prevention, the Bureau of Fire Alarm Telegraph and other branches of the department.

Testing New York Fire Department Pumpers

It is generally believed that the full report of the survey will be ready for publication about September of this year.

Since the survey was started in March, much speculation has arisen in fire-fighting circles as to what brought the survey about. It is known that the survey was welcomed by both Chief John Kenlon and Fire Commissioner John J. Dorman who requested Mayor James J. Walker for permission to have this work proceed. The officers of the department believe that the findings will be not only a testimonial to the efficiency and morale of the New York Fire Department, but will add to the good work of the entire fire-fighting profession.

WM. JEROME DALY.

Many Perish in Japan Forest Fire

Thirty bodies have been recovered from areas devastated at Saghalien, Japan, from forest fires. It is reported that forty children perished in the blazing schoolhouse at Esutorimachi, in the center of the conflagration, and that ninety-eight were injured. About four thousand persons are homeless, several villages have been wiped out and 1,700 homes destroyed.

The blaze started eighty miles southwest of Esutorimachi, and passed through the town. At one time the blaze threatened Shikika, but changed its course and veered into the dense forest of lower Shikika.

Rolling stock was destroyed when the flames went through the Tayohara freight yard. One train was forced to turn back due to the fire.

Frame Areas and Conflagrations

(*Continued from page* 494)

these branch lines can cover a whole block and three or four such layouts are able to do very effective work in covering a considerable area.

If 1½-inch hose is not employed, then 2½-inch lines will have to be stretched and branched into two 2½-inch lines with small tips. Using the 2½-inch lines instead of the 1½-inch will require more men, due to the additional weight of the 2½-inch charged lines over 1½-inch.

If open bodies of water are available, such as streams, ponds, rivers, etc., and if the supply in the mains has become deficient, these other sources should be put into service without delay. It may be necessary to place engines in relay, but even with such an arrangement satisfactory streams can be

Fig. 3.—One Reason Why Frame Dwelling Area Fires Spread
Here's a section of a wood shingle roof of a frame dwelling after a couple of embers had lit on it. Luckily they were detected before they had involved the entire roof. Nevertheless the fires resulting from them burned holes through the shingles.

delivered and possibly inexhaustible supplies of water had.

To sum up, the frame area fire requires fast work, plenty of men, plenty of hose and apparatus, as well as continual and thorough patrol work.

Firemen Poisoned at Box Supper

Two hundred persons suffered with ptomaine poisoning from a box supper arranged as an entertainment feature for firemen and their wives attending the Oklahoma State Firemen's convention in Muskogee. Five of the guests were in serious condition. Many were stricken at a dance that followed the supper and slumped to the floor. Others who left the city after the supper to drive to nearby towns, became ill on the road.

So many firemen were on the sick list that the city provided volunteers as a precautionary measure.

An investigation was made to determine the cause of the poisoning. Several kinds of cold meat sandwiches were served at the supper.

Gardiner, Me., Will Buy Apparatus—Gardiner, Me., is making plans to purchase new fire apparatus.

BOSTON HAS EXPERIENCE WITH SOME UNUSUAL FIRES

Gasoline Truck Spills Contents Over Street and Resulting Blaze Sets Fire to Bridge—Several Blazes Occur on Boston's Waterfront

By HARRY BELKNAP

BOSTON, Mass., has had a number of rather unusual fires recently. One of these occurred when a gasoline tank truck became unmanageable on Southampton Street and crashed into two poles carrying electric light and trolley wires. The gasoline flowed into the street and became ignited, turning the section into a seething mass of flames and causing the sounding of two alarms. A trolley car had just passed the scene and the passengers fortunately escaped. Seventy cans of foam powder, and water lines, were used in fighting the blaze. The flames set fire to the wooden planking of a bridge. A hole was chopped in the bridge and a Bresnan nozzle used effectively. An elderly man later fell through the hole and was pulled out of the bed of a creek by a fireman after Engineer James E. Plunkett, of the motor squad, had slid down and attached a rope to him. The blaze was spectacular and drew a crowd to the scene. District Chief Edward J. Chamberlain was in charge of the department operations until the arrival of Chief Daniel F. Sennott.

Soon after this there was a series of man-hole explosions on Summer Street near the corner of Chauncy Street which broke windows in a number of stores on both sides of the street and created a panic among pedestrians, forty of whom were injured. After apparatus had arrived on the scene in response to an alarm from Box 1443, a second explosion took place which hurled heavy iron man-hole covers high in the air. Several firemen were knocked over and one was hurled through a window. Special calls were sent in for the rescue company and the searchlight wagons. Carbon dioxide extinguishers were used in fighting the blaze in the underground passages.

State Fire Marshal George C. Neal, after an investigation, stated that he believed the initial cause of the explosions was oil soaked paper which covers the copper feeders inside the lead sheathing laid by electric light companies. He said that heating of the sheathing was caused by the electric power going through the wires and that this in turn generated gas from the mineral oil saturating the paper covering and that expansion of the gas created a terrific pressure which was the direct cause of the explosion. Two short sections of cable showing charred paper were turned over to the marshal and are being examined by P. L. Charter, chemist of the Massachusetts State Department of Public Safety, and Walter L. Wedger, expert on explosives. John J. Buckley, of the Edison Electric Illuminating Company, stated "We use a paper covered leaded cable which is universally recognized as the very best. If we knew anything better we would use it."

Another odd blaze took place on board of a Coast Guard Destroyer hauled out on the marine railway in the Boston Navy Yard. The fire was in fuel oil in the engine room and bilges and made dense smoke until extinguished by the use of foamite. Two alarms were sounded calling out considerable land apparatus and the fireboats.

In a fire in bales of cotton and jute in the lower hold of the Savannah Line Steamship "City of Chattanooga" at the Hoosac docks in the Charlestown section of the city, acetylene torches were used to cut holes in the steel deck plates to permit the use of cellar pipes.

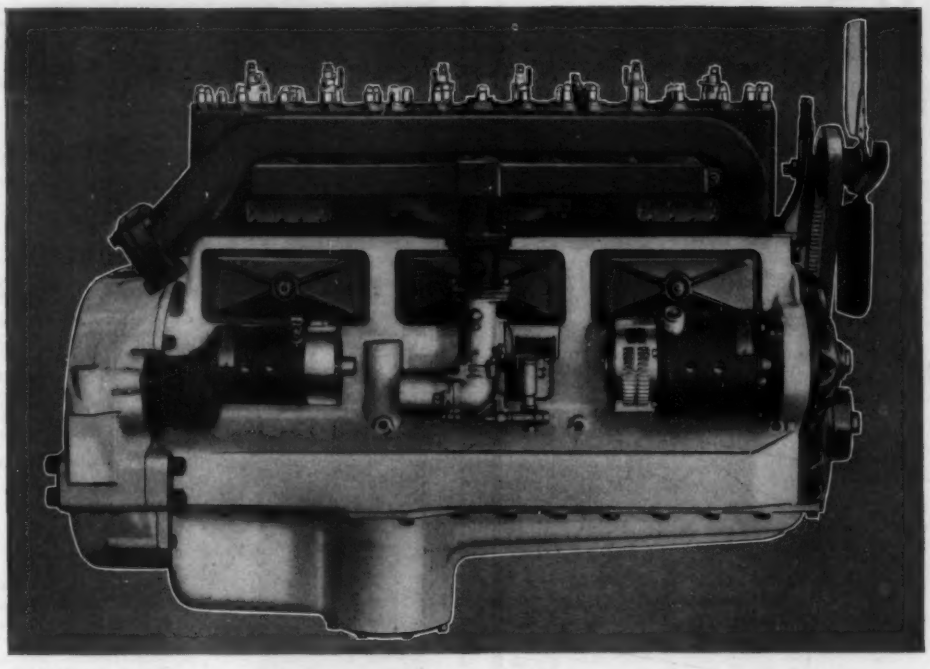
A troublesome fire occurred in a large pile of mahogany logs on a dock in South Boston which necessitated a still and bell alarm and a special fireboat call.

Four Killed in Fireworks Plant Fire

Four persons were killed and several other employees injured, in a series of blasts that destroyed the plant of the National Fireworks Company in Hanover, Mass. Five of the small, one-story buildings of which the plant consists, were wrecked. The plant employs 350 persons of which 112 are women. The damage to the plant was set at $5,000.

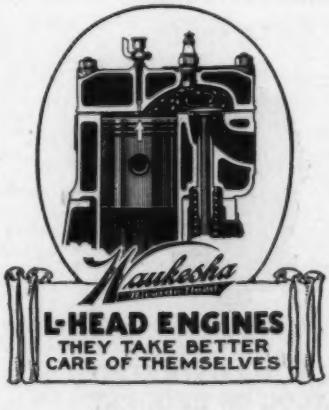
It is believed that the fire started in some unknown manner in a tray of dried powder on a rock in a mixing building. Employees who were trained for just such emergencies, quickly filed out to safer zones.

New Station Opened in Mishawaka, Ind.—A new fire station of the residential type has been opened in Mishawaka, Ind. It was built of brick along English style of architecture.



here's an engine with *Remarkable Stamina*

The engine of the old "benzine buggy" fairly bristled, it had so many different parts. Since trouble was always developing with one or another of them, it was decidedly a case of compulsory accessibility.



Today it's different. The Waukesha Engine is famous for its *Non-Stop* features. The working parts *Keep on Working*. Take a look at this Heavy-Duty Waukesha Fire Pumper Engine with its genuine Ricardo Head. See how perfectly protected the working parts are. Not only that but Waukesha has positive filtered oil lubrication, triple strength crankshaft, "girder" type crankcase, "truncated non-rocking cylinders." All these factors combine to give Waukesha its remarkable stamina in continuous pumping. Write for descriptive Bulletin No. 679.

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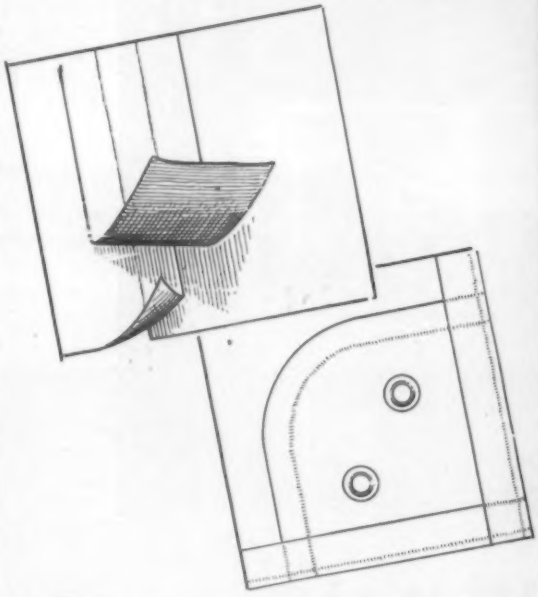

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Rugged enough to stand most strenuous service but light enough to be easily handled. Weight 38 pounds. Made 12x18 feet, which is the standard size. Rubber covers are approved by the National Board of Fire Underwriters in preference to other protective covers. Used by departments everywhere. Be sure to specify CLIFTON the next time you order covers.

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C. G. BRAXMAR CO.
242 West 55th St., New York

The Round Table

(*Continued from page 496*)

five volunteers. There are two paid men on the day shift and three paid men on the night shift. If a fire occurs during the day we always have plenty of help. When it happens at night, the telephone operator at the central office calls the men all over the town. Our longest run is not over a mile from the central fire station.

J. S. Ruiz, Las Cruces, N. Mex.: We have a population of about seven thousand which is somewhat scattered. I divided the town into four wards. The fire siren gives the alarm and the steam whistle at the electric light and ice plant gives us the number of the ward, viz., one, two, three, or four.

When the alarm sounds, the first man to arrive at the fire house goes to the phone and secures as quickly as he can the exact location of the fire. The next man to arrive starts number one truck. As others arrive the rest of the apparatus then proceeds to the fire.

A long whistle from the electric plant indicates that the fire is over.

Martin C. Ringer, Chief, Wayne, Nebr.: We have a siren for calling out firemen. Also there is a telephone installed in the truck room which has preference over all other phones. The first man to arrive at the engine house takes down the receiver and is told by central just where the fire is. Our central operators must listen in on our fire call number in order to give this information without delay. We receive splendid cooperation from the telephone company.

Also, after the siren is sounded, a general designation of the fire is given by blowing one, two, three or four short blasts on the whistle. This indicates the ward in which the fire has started.

This method has proven very satisfactory here. The small sirens on the fire trucks can also be heard a long way. These also help in indicating the location of the fire.

In answer to your second question, I would say that our men do call the local telephone headquarters if they want information about the fire.

H. F. Wagner, Chief, Monett, Mo.: Our method of giving fire alarm is by siren. We have a volunteer department. Three of our men live next to the fire house and when an alarm is received, they take the apparatus to the fire. The remainder of the men secure information from the telephone company. We have an arrangement with the telephone company whereby they give the information to the firemen as they call. This information is not given to outsiders.

We have a man stationed at the fire house to give the location of the fire to men who were unable to secure this information over the phone due to congestion at the central office.

R. D. Wells, Chief, Falmouth, Mass.: This town employs a fire siren, a whistle and a diaphone for calling the firemen. In employing the fire siren, we use this for a general alarm and also for calling additional help after a coded signal has been sounded on the whistle or the diaphone.

The firemen do not find it neecssary to call the local telephone headquarters for information because there is a P. B. X. switchboard in the central fire station and an operator on duty who answers all telephone inquiries.

Telephone central in this town is usually not congested because a first alarm is sounded on tappers and gongs in the houses and the places of work of the several firemen. On a second or general alarm, the location is designated by code signal which represents the location of a fire alarm box, or, if the system of telegraphing does not cover the location, then a phantom box location is sounded.

There are a sufficient number of firemen to respond on the first alarm without having to blow the whistle on the outside. As a rule, a first alarm assignment will be taken care of by the permanent men.

J. F. Donovan, Chief, Meriden, Conn.: We have four fire houses with a bell tower on each house. When a second alarm is sounded, all apparatus responds, unless the call comes from outside the city. In this case, the chief must be notified before responding to such an alarm.

Firemen living near the station get the location of the fire from the indicator in the fire house.

If the telehpone central is congested with calls, the firemen call fire department emergency.

R. H. Hughes, Chief, Deming, N. Mex.: We have a Gamewell box system here which has worked very satisfactorily in calling out the firemen. The whistle which is located on the electric light and ice plant can be heard by the men.

We have two American La France pumpers which give very good service. Our department is very efficient and is ranked highly by the underwriters of New Mexico.

A. F. Newick, Chief, York, Maine: We use a compressed air fire whistle. A master box in the fire station is used for telephone calls.

York Harbor district, which is part of the town, has a fire alarm system. The rest of the town is taken care of by telephone calls, with a disc or box wheel blown from the master box at the fire house.

Our department is thirteen years old. When we first started we had trouble with telephone calls. Through a local paper we ran a notice asking people not to call when the fire whistle blows in order to leave the lines open for the firemen. This notice was run at different times. At present we have no trouble with regard to telephone calls from outsiders.

G. E. Robinson, Ex-Chief, Canton, N. Y.: We use a siren which gives the box number. Every fireman has a telephone so as to avoid delay in getting information.

The public should be educated to the fact that they must not use the telephone at the time an alarm is sounded. It is necessary that the firemen secure information as to the location of the fire immediately in order to arrive at the blaze as quickly as possible. If the wires are congested, much time is lost and property is destroyed because of the delay.

Geo. O. Shively, Chief, Elizabethtown, Ky.: Our telephone exchange handles our siren. The switchboard at the local telephone office is arranged with a plug for calling the chief, assistant chief and two firemen. After these

There's Plenty of Work at a Tenement House Fire

Over one hundred families were driven to the streets when a fire broke out in a tenement house in Hoboken, N. J. A policeman who lived in one of the houses nearby heroically rescued a mother by lowering her through a window, to the street. The photograph shows a general view of the fire.

calls have been put through, the siren is then sounded for the rest of the men at the fire house.

While the operators are bothered with calls from outsiders asking for information about the fire, this does not interfere with the department as they have already been notified.

This plan is almost as effective as if we had a regular alarm system.

W. Giddens, Chief, Berry, Fla.: We use a siren for calling out the fire. The apparatus is also equipped with sirens.

Firemen do not use the telephone for information about fires. If they do not hear the siren on the apparatus, indicating in which direction they should travel, they go to the fire station. I endeavor to have my men live as close to the fire house as possible. All of the men have cars with booster plates bearing the letter "F. D." In this way other cars give them the right of way.

All the men have badges and caps and if at all possible, they wear their caps to the fire. If their own cars are not running, others will take them to the scene of the fire, knowing they are members of the department.

C. E. Henshaw, Chief, New Smyrna, Fla.: We use an electric siren on the apparatus. We sound the siren three times and then pause. Then it is sounded once for South Main Street, twice for North Main Street,, and three times for the extreme north of the city. In case of a fire in the outskirts of the city, which means a brush or woods fire, the siren is just sounded the three times. This means that the men are to come to the station.

If any of the men should miss the count and not know just where the fire is, they call the station for information.

Notices in the paper and cooperation on the part of the telephone company have been the means of keeping the telephone lines from being congested. It took some time to impress on the minds of people not to call central for information about fires. However, we finally worked this out satisfactorily.

C. R. Drew, Chief, Kingston, Mass.: Our town is divided into sections. We use a coding system. In case of fire, the section number is blown on the siren which is operated at the central fire station.

Should any member be uncertain as to the exact location of the blaze, he calls up for information. All drivers are required to respond to the central station in case of fire.

Geo. B. Walker, Chief, Riverview, Maine: We have a fire alarm system furnished by the Sterling Siren Company. There are boxes at different sections of the town which can be rung from the central office.

We have very little trouble with telephones being congested.

C. H. Thrasher, Chief, Tuskegee, Ala.: We have a volunteer fire department. At present we are using the bell as a fire alarm, but we are planning to install a fire alarm system using the coded diaphone with boxes.

John N. Mitchell, Chief, Hoisington, Kan.: We have an electric siren. Each fireman has a telephone and is called by central in case of fire.

The telephone company does not answer calls for two minutes after an alarm has been sounded, except from firemen. At the central office the telephone numbers of each fireman is printed in red so that the operator can answer these calls without much confusion.

H. J. Rosenstihl, Chief, Union Springs, Ala.: We use the telephone to call firemen. The alarm is received by central, who in turn notifies the fire department, the chief, the water plant, and also the firemen at their respective homes. However, we plan purchasing a siren soon.

We do not have much trouble with congestion at the local telephone office due to the fact that the operator only answers essential calls for a minute or two after an alarm of fire has been turned in.

All of our firemen have cars and are very prompt in getting to fires.

John W. Hambleton, Chief, Cannelton, Ind.: Our fire signal is a large whistle on a factory building. The city is divided into four wards. In case of fire the telephone company notifies the factory. The whistle is blown either one, two, three, or four times indicating the ward in which the fire has started. This method has worked out very well.

John R. Manners, Chief, Wahoo, Neb.: We use a twelve horse power siren in giving a general alarm of fire.

The firemen can call the telephone office and get the location of the fire by givng the code that is arranged with the company. Information is not given to subscribers who do not give the code. This code is changed occasionally as it becomes known generally. We have found this method very satisfactory.

Ira J. Parsons, Chief, Superior, Neb.: We had a lot of trouble with congestion in the local telephone office, as well as congestion in the streets, which interfered a great deal when an alarm of fire was turned in. At the present time, the telephone company calls the firemen and then waits two or three minutes before sounding the alarm. We find that this method works much better than sounding the alarm and then calling the men as we formerly did.

J. P. Brock, Chief, Carollton, Ga.: At the present time we have a siren which sounds the general alarm of fire. However, we have no method of telling the location of the fire.

If a fire occurs during the day, the firemen call the local telephone operator. If it occurs at night, the operators call the men.

We have never had any experience with congested telephone lines. All of our firemen have cars, which helps to get them to the scene of the fire quickly.

W. M. Estes, Chief, Cullman, Ala.: We use two fire whistles located on our city power house to give the general alarm. These whistles also designate the ward in which the fire has started by giving long and short blasts. Our apparatus is also equipped with a siren.

To avoid congestion in the local telephone office, the operators refuse to give information regarding the fire.

Geo. Rosenberger, Chief, Alexandria, Ala.: The general alarm is given by a bell on the fire station. The box number is blown by a whistle at the water works. Thus, for box number four, four successive short blasts are given; for box twenty-one, two blasts, a pause, and then one blast. This method applies to all the other boxes.

When the fire pressure is turned in the mains, the whistle gives this signal by sounding two blasts. When more pressure is needed, two blasts are given.

One blast of the whistle is the signal that the fire is under control. When the fire has been extingiushed, this is announced by three long blasts.

Chief of Fire Department, Harrodsburg, Ky.: We blow the code to give the alarm of fire. Headquarters then calls the firemen and gives them the location of the fire.

To avoid congestion, the operator only gives the information to firemen.

Business Section of Newport, R. I., Endangered

Fire recently destroyed a three-story department store in Newport, R. I., and an adjoining building, and for a while threatened the retail mercantile section. Absence of wind and a prevailing heavy rain minimized the flying brand hazard. For a while the situation appeared so serious that the mayor sent calls for outside aid. Companies were rushed from Fall River, Mass., from a nearby U. S. Naval Training Station, Fort Adams, Middletown, and a small pumper was sent from a local country estate. About 150 firemen were on duty. Total loss was estimated at $75,000.

JOHN S. COGGESHALL.

Mahoney Heads Lowell, Mass., Fire Bureau—Captain Patrick T. Mahoney is to head the newly formed fire prevention bureau in Lowell, Mass. Chief Sullivan believes that the new bureau will help materially in reducing incendiarism and following up inspections.

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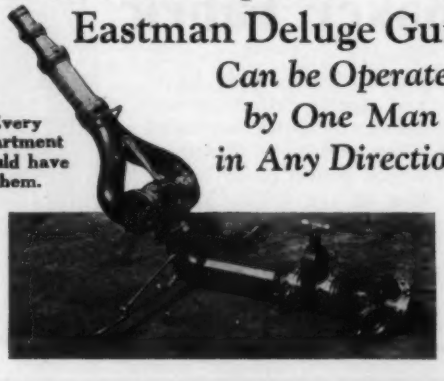
This New and Improved
Eastman Deluge Gun
Can be Operated by One Man in Any Direction

Every department should have them.



The "Masterpiece" of Nozzles

Combines benefits of wagon pipe and deluge set. Quickly attached to hose. Can be placed and easily operated anywhere hose can be laid. Large water-ways. Easy working under all pressures. Can be used as deck pipe. The product of a quarter century's experience designing and building quality nozzle equipment.

Eastman Misc. Hose Equipment

The Eastman line also includes 2—3—4 way and Jumbo deluge sets, high pressure platforms, tripod and other type hose holders, plain and shut-off nozzles, hose carriers, siamese connections, hydrant gates, etc. May we send you complete information?

Send now for Catalogs!

Samuel Eastman Co.

Concord, New Hampshire

Newest Designs ***Highest Quality***

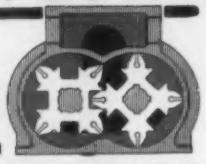
Specializing in badges and insignia equipment for every fire department need, the EVERSON-ROSS line, known for its fine quality of materials and workmanship, offers a large, up-to-date selection to suit the most discriminating taste. Before you buy—

Write for our Fire Department Badge Catalog No. 32.

EVERSON-ROSS CO.

88 Chambers Street, New York

NORTHERN
ROTARY
PUMPS



"MORE GALLONS PER HORSE POWER"
NORTHERN PUMP CO.
MINNEAPOLIS, MINN.
OFFICES IN PRINCIPAL CITIES

Novo Acid Jars & Holders

of every description stronger than lead and non-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks
Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General
Send for Complete Catalog
LALLY FIRE APPLIANCE CO.
Wilmington Brass Co., Wilmington, Del.

Fire Alarm Signals
Water Meters
Compounding Valves
Stops
Water Pressure Regulators
Presses for Lining Service Pipe with Cement
Union Water Meter Co., Worcester, Mass.
Incorporated 1868

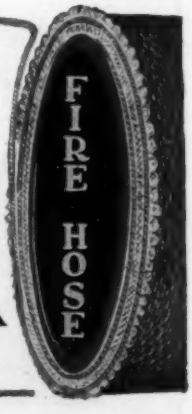
Quick-Acting Reliable

Anderson-Hale Improved

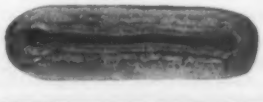
FIRE STATION DOOR OPENERS
Over 1,200 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening.
Opens from driver's seat or from floor. Many repeat orders from users.
Write for complete information.
The Anderson Coupling & Fire Supply Co.
Mfrs. Motor Fire Equipment and Fire Supplies
Kansas City, Kansas

ROTARY PUMPS
FIRE HYDRANTS
FIRE APPARATUS
Waterous Dependable
Send for our Complete Catalog
Agents in Principal Cities
WATEROUS COMPANY
St. Paul, Minnesota

Baker Fabric
Wound with a woven-in strand which runs back and forth from rubber lining to outer surface. This yields a pliability which prevents all buckling at the folds. Write for details.
MANUFACTURED EXCLUSIVELY BY
HEWITT - GUTTA PERCHA RUBBER CORPORATION
BUFFALO, N. Y.
(Also makers of single and double jacket hose)



BI-LATERAL FIRE HOSE
THE BI-LATERAL FIRE HOSE CO.
Canal St. Station
110 North Franklin St.
Chicago, Ill.



The City of Wheeling just purchased 5,000 feet of Bi-Lateral Fire Hose coupled with rocker lug couplings. This city purchased 5,000 feet last year and it is believed that as soon as their department is equipped with this improved construction in fire hose they will be able to cut their hose expense to less than half of what it has been previously. Let the BI-LATERAL FIRE HOSE COMPANY tell you why this may be true.

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.
Write for the Facts
EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

FIRE DEPARTMENT ACTIVITIES

Detroit Buys Cars for Department—Detroit has purchased fourteen new Graham-Paige coupes for the fire department.

Department Organized in Napolean, N. D.—A volunteer fire department was organized in Napolean, N. D.

U. S. Natt Co. Reports Two Sales—"Universal" fire apparatus has been sold to Algoma, Wis., and Corydon, Ia.

W. Ironton, O., Has New Station—A new fire station has been placed in service in West Ironton, Ohio.

Delavan Wis., to Charge for Out-of-Town Calls—Delavan, Wis., is to charge for all out-of-town calls.

Delphos, O., to Receive New Apparatus—New fire apparatus and equipment costing $13,000, has been purchased by Delphos, Ohio.

Yonkers to Erect New Fire Stations—Plans are being drawn for two combined fire stations and police houses to be erected in Yonkers, N. Y.

Philadelphia Adds 26 Firemen—Twenty-six firemen have been assigned to companies in Philadelphia, Pa. The men will take a five-weeks course at the training school.

Convention to be Held in Lemoyne, Pa.—The convention of the Southeastern Pennsylvania Firemen's Association will be held in Lemoyne, Pa., July 18.

Central City, Pa., Plans for Convention—The Somerset County Firemen's Association will hold their annual convention in Central City, Pa., July 22-27.

Ex-Chief of Dennison, Ohio, Dead—Samuel J. Vantine, ninety years old, first fire chief of Dennison, Ohio, died from a heart attack while attending a lodge meeting.

Salt Lake City Firemen Want Pay Increase—A campaign has been launched in Salt Lake City, Utah, to get a ten-dollar-a-month increase for each fireman in the department.

Manufacturers Hosts to Red Wing, Minn., Firemen—The Red Wing Manufactures' Association was host to the Red Wing, Minn., fire department at a lobster dinner served by members of the Parish Aid Society.

Change Made in Sharon, Pa., Ordinance—A change has been made in an ordinance in Sharon, Pa., so that should a chief discover a dangerous commodity in a building, he can order it removed at once, instead of waiting ten days.

Chief Anderson of Keokuk, Ia., Injured—Chief John Anderson of Keokuk, Ia., and his driver were injured when the car in which they were responding to a fire alarm was rammed in the rear by a car driven by a woman.

Knoxville, Tenn., Has Drill Tower—A drill tower has been erected in Knoxville, Tenn. The tower is operated from May 1 to October 1 and each company in the department drills once a week.

San Bernardino County May Buy Apparatus—San Bernardino, Calif., county forestry department has included, in its budget, a recommendation for the purchase of fire apparatus to cost $5,500.

Work Started on Berwyn, Pa., House—Ground was broken in Berwyn, Pa., for the construction of a brick fire house to cost $27,000. The apparatus floor will have room for four pieces of apparatus.

Eastern Maryland Firemen Organize—Fire companies in the eastern section of Maryland have organized the Eastern Shore Volunteer Firemen's Association. The first meeting was held in Salisbury.

Watertown, N. Y., Firemen Want Increase—Firemen of Watertown, N. Y., are asking for a pay increase of two dollars a week. In the last ten years, the men have only been granted an increase of fifty cents a week. Each man averages twelve hours duty daily.

Fire School Planned for Glen Cove, N. Y., Area—Forty-five chiefs attended a meeting in Glen Cove, N. Y., held to discuss plans for a fire school. Instead of holding one school, it is believed that there is sufficient need for establishing three separate schools.

Beloit, Wis., Chief to Resign—Chief John E. Nygren of Beloit, Wis., sixty-two years old, plans to retire from the the service some time next year. He served as captain in Rockford for thirteen years and came to Beloit on April 30, 1908 to head the local department.

Tacoma Seeks Name for New Fireboat—The Commissioner of of Public Safety in Tacoma, Wash., is trying to discover a suitable name for the city's new fireboat. A local newspaper is conducting a prize contest to find the best name.

Wisconsin Chiefs Form Bureau—Fifteen chiefs from various parts of Wisconsin met in Milwaukee to discuss the formation of a new fire bureau for the promotion of uniform fire laws. The first regular meeting of this group is expected to be held at the University of Wisconsin in Madison, June 25-28, at the time the fire school is held.

Washington, D. C., May Control Apparatus Speed—Senator Carter Glass of Virginia is making a survey of fire apparatus speed preparatory to introducing a measure to regulate the speed of fire apparatus in Washington, D. C. The Senator stated that many complaints have been received concerning fire apparatus runs.

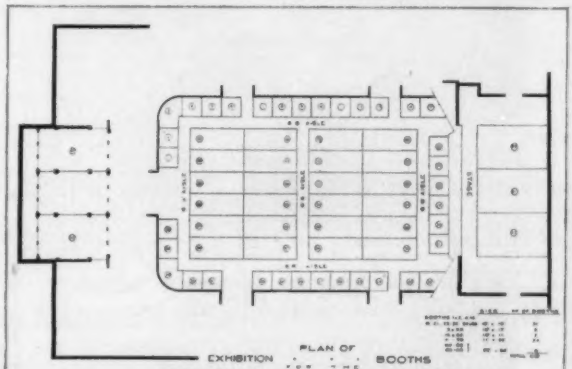
Insurance Reduced in White Plains—Following a recent survey, White Plains, N. Y., which was formerly in Class 5, has been moved up to Class 2, and a reduction in rates will follow. Prior to 1923 the base rate in the city was forty-one cents and now it will be eighteen cents. This is much below the rates enjoyed by nearby Westchester county communities.

Firemen Pay Last Respects to Late Chief Denger—Over one hundred firemen from Davenport, Ia., and surrounding cities, attended the funeral of the late Chief Peter Denger of Davenport, Ia. As the casket was being carried from the church to the hearse, two solid lines of firemen stood at attention as a tribute to the late fire fighter.

Chief Armstrong of Kingston Given Medal—Chief James Armstrong of Kingston, Ontario, Canada, will have completed twenty years of service on June 2. In recognition of this the council will present him with a long service medal. Chief Armstrong has been a fire-fighter for thirty-two years. He started in Toronto and served from May 1897 to June 1908, and after a year as chief in Port Arthur, came to Kingston.

Applications Invited for I. A. F. C. Display Space

Reservations are now being received for display space for the fifty-seventh annual convention of the International Association of Fire Chiefs to be held in Birmingham, Ala., October 22-25. The exhibits are in charge of Chief Selden R. Allen, Brookline, Mass., chairman of the exhibit committee, and they will be on display in the City Auditorium.



A rental of ten cents a square foot is charged, and a deposit of twenty-five per cent of the rental fee must be sent with the application for space.

There will be sixty-five booths as follows: thirty-one, ten by ten feet; two, ten by seventeen feet; two, ten by eleven feet; twenty-four, eleven by twenty-eight feet, and six, twenty-two by thirty-six feet.

PROPOSED IMPROVEMENTS

Johnson City, Washington Co., Tenn.—At recent election city voted in favor of fire department bonds to the amount of $60,000.

Novato, Marin Co., Calif.—Plans for new fire station have been accepted by Fire Commission, according to reports.

Memphis, Shelby Co., Tenn.—An election is to be held in July to vote on fire department improvement bonds to the amount of $300,000. D. C. Miller, City Clerk.

North End, Orange Co., N. Y.—Plans are being prepared to erect new fire station for North End Hose Co. to be erected on Wilmont Road. Estimated cost $40,000.

Canton, Stark Co., Ohio—City Council considering erection of fire alarm headquarters building on site of No. 4 fire station.

For Sale

Full equipment of Seagrave City Service Truck. Two 35 gallon chemical tanks, Hose, Reel, 225 foot Ladders, Poles, Axes, etc., Whole or part, all in good condition. For particulars apply to: Frank L. Kramer, Sec., Lambertville, N. J.
6-12,26

INVENTORS
What Have You?

Well-known maker of fire equipment is interested in adding to his line of manufacture an article or articles that can be sold to fire departments and municipalities.

Would be willing to buy such articles outright or manufacture and sell on a royalty basis.

Company has a long successful record, excellent manufacturing facilities, and a well established selling organization.

All propositions submitted will be treated in confidence. Address: Box 170, c/o FIRE ENGINEERING, 225 W. 34th St., New York City.
6-12, 26-7, 10.

CONVENTION DATES

June 11-13—FIRE CHIEFS' ASSOCIATION OF OHIO. (Change of date.) 12th Annual Convention, Assembly and Exhibit Rooms, Dodge and Smith Motor Sales Company Building, Sandusky, Ohio. Secretary-Treasurer, Chief Philip J. Harty, Fire Dept., Youngstown Sheet & Tube Company, Ohio.

June 11-13—SOUTHERN NEW YORK FIREMEN'S ASSOCIATION. 34th Annual Convention, and Tournament, Lindenhurst, N. Y.; Secretary, August Kalb, Rockville Center, N. Y. Theodore W. Nass, Lindenhurst, N. Y.

June 11-15—TEXAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Galveston, Tex. Secretary, Olin Culbertson, Hillsboro, Tex.

June 12-13—NORTHERN INDIANA INDUSTRIAL AND VOLUNTEER FIREMEN'S ASSOCIATION. 24th Annual Convention, Bremen, Ind. Secretary-Treasurer, Hugh Russell, Bluffton, Ind.

June 12-14—MARYLAND STATE FIREMEN'S ASSOCIATION. 37th Annual Convention, Lonaconing, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 14-15—DELAWARE COUNTY FIREMEN'S ASSOCIATION. 23rd Annual Convention and Parade, Clifton Heights, Pa. Secretary, William E. Wunderlich, Landsdowne, Pa.

June 15—LEBANON COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Myerstown, Pa. Secretary, William I. Kutz, Box 233, Myerstown, Pa.

June 18-20—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 40th Annual Convention, Hendrick Hudson Hotel, Troy, N. Y. Secretary, Chief Chris. W. Noll, Fire Department, Poughkeepsie, N. Y.

June 18-20—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. 23rd Annual Convention, Binghamton, N. Y. Secretary, Chief James H. Golden, Fire Department, Cohoes, N. Y.

June 18-20—NORTH DAKOTA FIREMEN'S ASSOCIATION. 45th Annual Convention, Bismarck, N. Dak. Secretary, H. L. Reade, Bismarck.

June 18-21—ANNUAL FIREMEN'S SHORT COURSE. 5th Annual Short course for Firemen, University of Illinois, Champaign-Urbana, Ill. Address Asst. Chief Roy W. Alsip, Secretary, Illinois Fireman's Association, Fire Department, Champaign. Director of Course, Prof. C. E. Palmer, College of Enginering, University of Illinois, Champaign-Urbana.

June 19—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. 56th Annual Conventon, Ashland, Ohio. Secretary, C. R. Bowersox, 430 Richardson Bldg., Toledo, Ohio.

June 20-22—WASHINGTON STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Everett, Wash. Secretary, H. S. Jenkins, City Electrician, Fire Headquarters, Bellingham, Wash.

June 21-July 7—INTERNATIONAL EXHIBITION OF FIRE APPARATUS AND CONGRESS OF WORLD FIRE PREVENTIONISTS. Under the patronage of the President of the French Republic, at the Grand Palais, Paris; 44th Annual Congress of the French Federation, Paris. General Secretary. Commandant G. Wattremez, Grand Palais, Avenue Alexandre III, Paris.

June 22-23—SOUTHERN CALIFORNIA FIRE CHIEFS' CLUB. 2nd Annual Convention, Ventura, Cal. Secretary-Treasurer, G. E. Zimmerman, Fire Department, Coronado, Cal.

June 24-28—AMERICAN WATER WORKS ASSOCIATION. 49th Convention, Hotel Royal York, Toronto, Ont., Can. Secretary, Beekman C. Little, Rochester, N. Y. Office of Association, 29 West 39th Street, New York City.

June 25-27—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 7th Annual Convention, Hotel Taft, New Haven, Conn. Exhibits, Second Regiment Armory. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.; Chairman, Exhibits, Chief John S. Pachl, Annex Fire Department, New Haven; Traffic Manager, Geo. F. Cobb, Boston.

June 25-28—SOUTH DAKOTA FIREMEN'S ASSOCIATION. 13th Annual Convention, and Tournament, Hot Springs, S. Dak. Secretary, M. C. Sullivan, Parkston, S. Dak.

July 3-4—WYOMING STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, and Tournament, Laramie, Wyo. Secretary, Chief Justin H. Patrick, Laramie, Wyo.

July 4-5—ASSOCIATION OF CANADIAN FIRE MARSHALS and DOMINION FIRE PREVENTION ASSOCIATION. Annual Conventions, Ottawa, Can.

July 9-11—MICHIGAN STATE FIREMEN'S ASSOCIATION. 55th Annual Convention, Sault Ste. Marie, Mich. Secretary, H. L. William, Ludington, Mich.

July 9-12—DOMINION ASSOCIATION OF FIRE CHIEFS. 21st Annual Convention, Coburg, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

July 10-11—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 9th Annual Convention, Wilmington, Del. Secretary, Sam H. Carson, Dover, Del.

July 11-12—EASTERN ASSOCIATION OF FIRE CHIEFS. (Change of date.) 2nd Annual Convention, Hotel Pennsylvania, New York City. Secretary, T. Howell Johnson, Room 602, Chamber of Commerce Bldg., Newark, N. J.

July 15-16—MONTANA STATE FIREMEN'S ASSOCIATION. 38th Annual Convention, Butte, Mont. Secretary-Treasurer, D. E. Moser, Bozeman, Mont.

July 15-19—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Convention, Hendersonville, N. C. Secretary, John L. Miller, Concord, N. C.

July 15-20—MARITIME FIRE CHIEFS' CONVENTION AND TOURNAMENT. 14th Annual Convention, Moncton, N. B. Secretary, Captain K. J. McCREA, St. John, N. B., Can.

July 17-19—INDIANA FIREMEN'S ASSOCIATION. 12th Annual Convention, Gary, Ind. Secretary, Clem Smith, Fire Headquarters, Terre Haute, Ind.

July 23-26—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 36th Annual Convention, Vancouver Hotel, Vancouver, B. C. Secretary, Jay W. Stevens, 113 Merchants Exchange Bldg., San Francisco, Cal.

August—IDAHO FIREMEN'S CONVENTION. Tentative, August or September, Idaho Falls, Ia. Secretary-Treasurer, Earl Heath, Idaho Falls.

August—MAINE STATE FIREMEN'S ASSOCIATION. 2nd Annual Convention (tentative, exact time to be announced later), Waterville, Me. Secretary, Earl E. Pratt, Fire Department, Auburn, Me.

Aug. 7-9—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Fullerton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth St., San Diego, Cal.

Aug. 7-9—SOUTHWESTERN ASSOCIATION OF VOLUNTEER FIREMEN OF NEW YORK. Annual Convention, Falconer, N. Y. Secretary, Royce Alden, Falconer, N. Y.

Aug. 12-14—UTAH STATE FIREMEN'S ASSOCIATION. 22nd Annual Convention, Tooele City, Utah, Secretary, Harris E. Anderson, Fire Headquarters, Salt Lake City, Utah.

Aug. 16-17—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Plaza Theatre, East Hartford, Conn. Secretary D. W. Hartford, South Norwalk.

Aug. 20-23—FIREMEN'S ASSOCIATION STATE OF NEW YORK. 57th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 26-28—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Gallup, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

Aug. 28-30—VIRGINIA STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Lexington, Va. Secretary, E. K. Landis, Pulaski, Va.

Sept. 3-5—KENTUCKY STATE FIREMEN'S ASSOCIATION. 1st Annual Convention, Ashland, Ky. Secretary, Captain S. G. Render, 303 Speed Bldg., Louisville, Ky.

Sept. 9-11—ARKANSAS STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Camden, Ark. Secretary-Treasurer, H. D. Compton, Central Fire Station, Little Rock, Ark.

Sept. 10-12—ILLINOIS FIREMEN'S ASSOCIATION. 42nd Annual Convention, Joliet, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill.

Sept. 17-18—IOWA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Red Oak, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 18-19—MISSOURI ASSOCIATION OF FIRE FIGHTERS (Consolidated with former Missouri State Association of Fire Chiefs). Annual Convention, Jefferson City, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 19-22—LOUSIANA STATE FIREMEN'S ASSOCIATION. 24th Annual Convention, Jennings, La. Secretary, Chief A. J. Bethancourt, Houma, La.

Sept. 20-21—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Atlantic City, N. J. (Tentative date, to be definitely set later by Executive Committee). Secretary, William Exall, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Oct. 1-3—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 50th Annual Convention, Hotel Roosevelt, Pittsburgh, Pa. Secretary, Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 15-17—RAILWAY FIRE PROTECTION ASSOCIATION. Annual Meeting, Toronto, Can., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio Railroad, Baltimore, Md.

Oct. 22-25—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 57th Annual Convention, Hotel Tutweiler, Birmingham, Ala. Exhibits City Auditorium. Recording Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 113 Merchants Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Selden R. Allen, Brookline, Mass.

New Trade Literature Received

The following literature descriptive of up-to-date methods and equipment for fire departments, has just been issued for general distribution, and can be procured by writing to the concern mentioned. Those desiring additional trade literature in which they are interested can use our regular "Information for Buyers" pages, listed in the Advertising Index.

Schoelkopf Manufacturing Co., Madison, Wis.: Folder on the Air-Lec device for opening and closing fire station doors.

Globe Manufacturing Co., Pittsfield, N. H.: Booklet on the Globe suit for fire department use.

Body Guard Manufacturing Co., St. Joseph, Mo.: Catalogue illustrated in color on the body guard suit.

Another Prominent Fire Chief says –

CITY OF HELENA
HELENA, ARKANSAS

March 30, 1929.

Fulton Bag & Cotton Mills,
Atlanta, Ga.

Gentlemen:

The city of Arkadelphia, Ark., wrote me for size and price of our covers and how many we had. I wrote them and told them all they wanted to know, also that we bought them from you and how much water damage we were saving by using them.

Chief Chas N Kirch

"Shuredry" Waterproofed SALVAGE COVERS

More evidence of the importance of "Shuredry" Salvage Covers to every Fire Department, no matter where located.

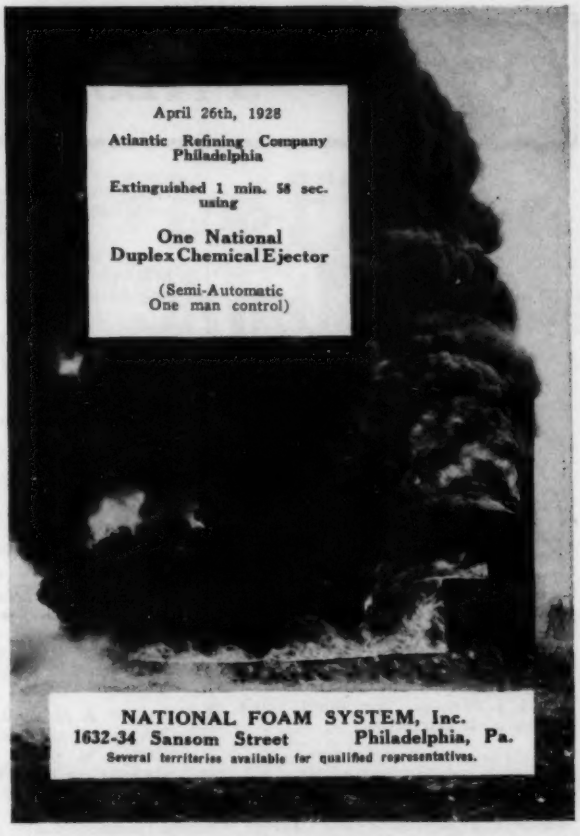
Not only do Shuredry Covers cost less than rubber, they are much easier to handle and spread, and do not peel or crack when folded and stored.

Write our nearest plant for samples and prices.

Fulton Bag & Cotton Mills

Brooklyn Dallas Atlanta, Ga. St. Louis Minneapolis
New Orleans Kan. City, Kan.

Manufacturers Since 1870



NATIONAL FOAM SYSTEM, Inc.
1632-34 Sansom Street Philadelphia, Pa.
Several territories available for qualified representatives.

MATHEWS

(Reg. U. S. Pat. Off.)

FIRE HYDRANTS
for
DOMESTIC
and
HIGH PRESSURE
Service

NOTE—

The positive waste value.

All operating threads are dry, being above the stuffing-box.

No toggles, no small, quick-wearing parts.

All moving parts are bronze or bronze-bushed.

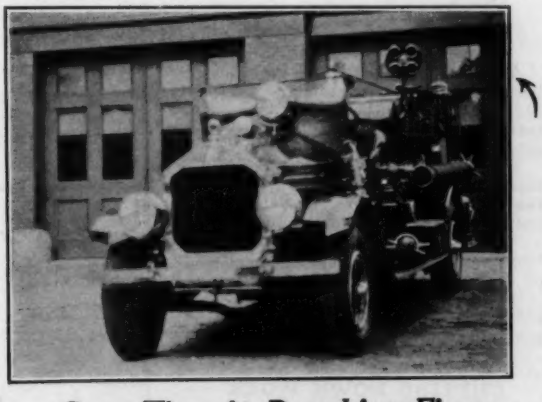
The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

An easily installed EXTENSION SECTION readily adapts them to new grade.

VALVES and BOXES
CAST IRON PIPE
Sand-Cast or "Sand-Spun"
FITTINGS

R. D. WOOD & CO., Phila., Pa.

Clear the Way to the Fire with "Whiting" Flashers



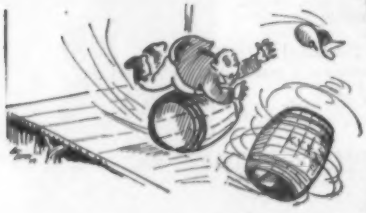
Save Time in Reaching Fires Decrease Fire Losses and Accidents

A distinctive revolving signal light that notifies Traffic Officers, Motorists and Pedestrians of approaching fire apparatus. Visible for a mile. Mounted high on apparatus. Clearly visible day or night. All moving parts enclosed. Now being used in the principal cities of New England. Should be standard equipment.

Send Now for Full Details

The Whiting Light Co. Hampton Beach, N. H.

FALSE ALARMS



Drawing by "Art" Espey

"Rolling In on a Second"

SO SAY WE ALL

A chief was lecturing to his men for their indifference to their jobs. Rather than spend their time in preparing for better ratings, the men were content to idle the hours away.

"Look here, men," said the chief, "when I was a fireman, I thought nothing of studying five hours a day in order to win my promotion."

"To tell you the truth, chief," replied a fireman, "we don't think so much of it ourselves."

YES, SIR!

The new battalion chief was a firm believer in discipline and respect for superior officers. When he called to inspect Engine 2, he noticed a rubber coat hanging where it shouldn't be. He called to a fireman:

"Is this your coat?"

"Yes."

"Yes, what?"

"Yes, it sure is."

HONOR THE DEAD

Although the names are kept secret, here is a story concerning a special car that was attached to a regular train, to take a party of chiefs to a prominent association convention.

The chiefs were having a glorious time in their special car, away from the regular travelers, but the poor porter was kept unusually busy.

"Here, porter," called one chief, "here's fifty cents for another pitcher of ice."

"Sorry, suh, but if Ah takes any mo' ice dat corpse in de baggage car ain't gonna keep."

CUTTING DOWN WORK

A new and inexperienced fireman was set to work to oil the apparatus, apply grease to the wheels and so forth. In a remarkably short time he reported to the captain that he was finished with the work.

The officer was very much surprised and said:

"Look here! Do you mean to say that you've greased all of them wheels so soon?"

"No, sir. Only the front two wheels."

"And why didn't you attend to the two in the back?"

"I thought, sir, that so long as the two front ones goes all right, the hind ones have to foller.

Sign in a laundry window: We do not tear your clothes with machinery. We do it carefully by hand.

RETROACTIVE

A man applied for a night's lodging at one of the fire houses in New York City. The firemen were not able to accommodate him and so they refused to grant the permission.

The same person is now resting in the city jail for thirty days. As a revenge for not being granted lodging, he turned in several alarms during the night so that the firemen, too, would be deprived of their sleep.

If testimony in court is to be believed, a tree will stand beside a road without making a move for sixty or seventy years, and then one day it will suddenly jump in front of an auto.

A GOOD SEARCH

A candidate for the department wanted to make sure that he was physically all right before he was examined by the civil service doctor. Upon the recommendation of friends he went to a well known doctor.

"I'll examine you carefully, sir, for five dollars," said the doctor.

"All right," was the reply. "And if you find it I'll split it fifty-fifty."

A woman told a magistrate that her husband was continually throwing plates at her, but that she didn't know why. Perhaps it was because he kept on missing her.

A TELL-TALE MARK

At the Community Club Dinner, it was the pleasure of a nice, kind, near-sighted old lady to be seated next to the chief. As a means for starting conversation, she remarked:

"What is that spot on your sleeve? Is it a distinction for good direction of hose lines?"

"No, madam. It is a mark for poor directing of soup."

CONCRETE EVIDENCE

An enthusiastic Rotarian was showing a friend about the prosperous, hustling community. But the visitor was greatly surprised that a whole string of business houses were empty, when the location was so advantageous.

The host pointed to one old looking building and said: "See that over there. That's the fire house. Well, the fire department band practices there."

Two can live as cheaply as one but it takes a lot more money to do it.

NO NEED TO CRY

The department was anxious to exhibit the newly organized orchestra, or band. Those who were experienced in concerts decided that is was necessary to have vocal music to break the monotony of musical numbers.

The auditorium engaged for the evening was crowded. A mother was there with her son. It was the first concert he attended. Pointing to the leader of the orchestra during a vocal solo, he asked:

"Hy, Ma, why does that man keep hitting that woman?"

"He's not hitting her."

"Well, what's she hollering for?"

In a town in Maine fire broke out in a building next to the post office. As there is no fire-fighting equipment in this village, the postoffice was sawed from its foundation and dragged to safety.

Drawing by "Art" Espey

And Now Chiefs are Expected to be Ornithologists

Chief Steuhl of Eastchester, N. Y., has had an amusing experience—one of the annoying and unexpected variety. He was called by some woman to extinguish a chimney fire. The chief discovered the trouble was due to some bird that had built a nest in the chimney so as to block the air passage. When the trouble was discovered, the chief felt like wringing the bird's neck.

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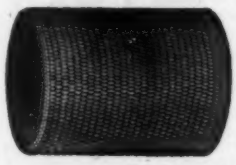

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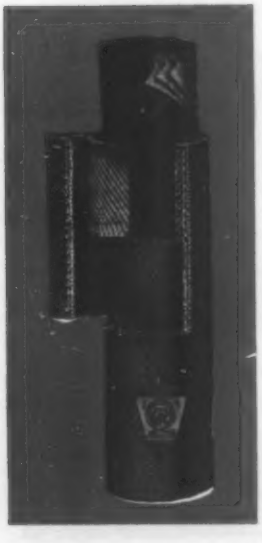

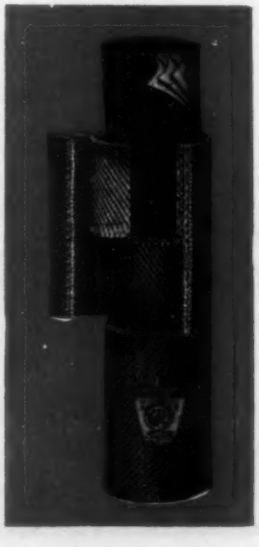

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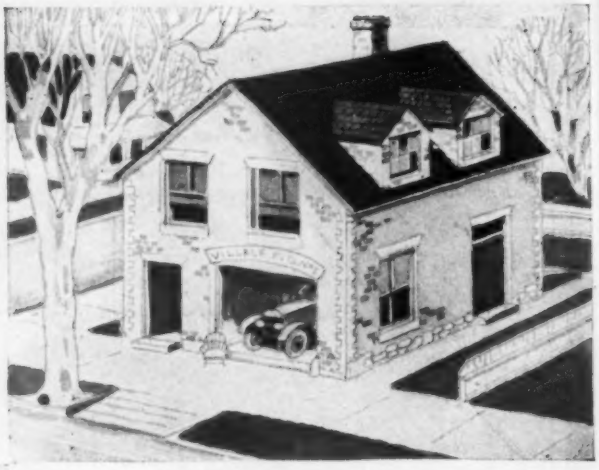

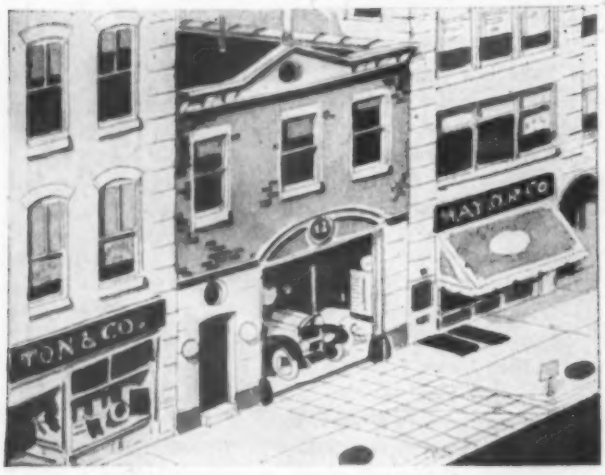

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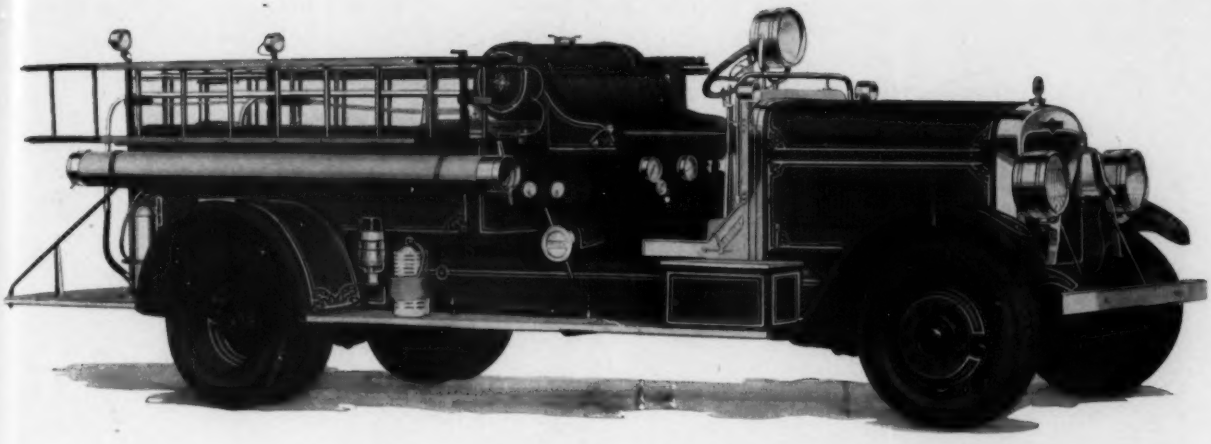

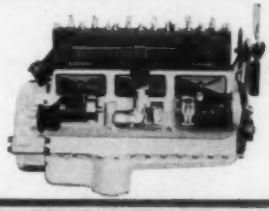

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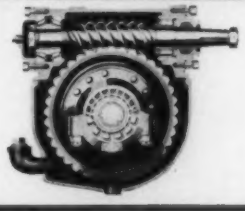

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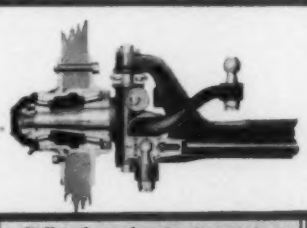

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